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MANUFACTURING TECHNOLOGY PROGRAM
INFORMATION SYSTEM:
FUNCTIONAL DESCRIPTION

February 1983

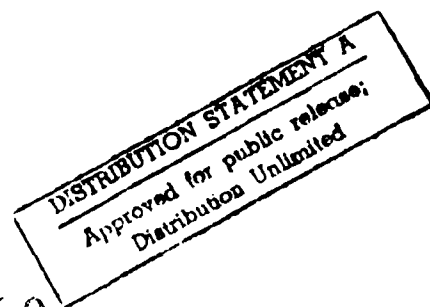Kenneth J. Wright
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This document contains a functional description of the Manufacturing Technology Program Information System (MTPIS). This MTPIS will provide OSD and Service staff members a tool to strengthen Program management's performance in planning, programming, budgeting, execution, documenting benefits and diffusing technology throughout the industrial base. (over)

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20.   ABSTRACT (cont.)

The proposed MTPIS is an automated data processing system to replace most
of the existing manual procedures used by OSD and Service staff members. The
system will provide automated storage of and access to Program-related data.
These data will reside in a central computer's data base and will be accessed by
the DBMS and related applicatons software.

Also described in this functional description are the proposed MTP report
formats and the data fields in each report. These reports will contain:

- General Reviews of MTP Activities
- Funding Reviews
- Summaries of Investment Activities
- Effectiveness Reports
- Recommendation Reports, and
- Budget, Apportionment, Effectiveness Graphics.

PREFACE

As DoD's Manufacturing Technology Program (MTP) expands, so do the quantity and complexity of data needed to manage it. The Program supports projects that seek to establish new or improved defense industrial manufacturing methods and techniques. MTP managers need an information system which will help them to effectively evaluate and control the Program, funding for which is expected to total $1.8 billion during the next five years.

This document is a functional description for such a system. It calls for automated methods to replace manual ones, automated storage and access to program data, and software to generate management reports. The description provides a basis for its intended users to understand the system. It also serves as a reference document for implementing the MTP information system.

Task Order RE104 of Department of Defense Contract MDA903-81-C-0166 authorized the development of this Functional Description (FD). The original project sponsor was the Deputy Under Secretary of Defense for Research and Engineering (DUSDR&E), Research and Advanced Technology (R&AT). The sponsor subsequently was changed to the DUSDR&E, Acquisition Management (AM). The project officer is Dr. Lloyd Lehn, Assistant for Manufacturing Technology in the Office of the Director for Industrial Resources, OUSDR&E(AM).

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SECTION 1. GENERAL

1.1 PURPOSE OF THE FUNCTIONAL DESCRIPTION

The Manufacturing Technology Program (MTP) is a DoD initiative to improve the productivity and responsiveness of the defense industrial base. Projects sponsored by the MT Program provide first-case applications of productivity-enhancing production technologies. Benefits from successful Program initiatives include reduced production cost, improved materiel quality and reliability, improved production safety and conservation of critical raw materials.

The MT Program has constantly grown in size since its inception. During the period FY83 through FY87, approximately $1.8 billion is planned for MT investments. As the Program grows, the tasks of managing and coordinating the investments become more vital. Each of the three Military Departments administers projects within its own MT Program. Because of the quantity of data involved in those management processes, MT Program managers in DoD need the support of an automated management information system. This document describes the functional requirements for such a system.

This Functional Description for the Manufacturing Technology Program Information System (MTPIS) is written to provide:

1. The system requirements to be satisfied, and the documentation of user requirements to guide system development.

2. Performance requirements, preliminary design, and user impacts, including one-time and continuing costs.

3. A basis for the development of system tests.

This document adheres to the requirements for a Functional Description in the "Department of Defense Automated Data Systems Documentation Standards," DoD 7935.1-S.

1.2 PROJECT REFERENCES

The Manufacturing Technology Program Information System will be developed to manage and process information relevant to the planning, performance and evaluation of the MT Program. The proposed system is a management information system supporting Program managers in the Office of the Secretary of Defense (OSD) and the three Military Departments. A list of potential system users is provided as Table 1-1. The proposed system is also a technical information service for the MT community (including industry, the Service commands and other government agencies) in that it maintains summaries of technical objectives, approaches, applications and benefits for planned, ongoing and completed MT investments.

The operating center to be responsible for system operation has not yet been designated. The organization to function as System Manager had not been selected.

The documents listed below are applicable to the development of the MTPIS.

- Task Order RE104 of Department of Defense Contract MDA903-81-C-0166

- Department of Defense Instruction 4200.15, "Manufacturing Technology Program," 14 July 1972 (currently being reviewed for revision)

- "Statement of Principles for Department of Defense Manufacturing Technology Program," Department of Defense, The Pentagon, Washington, D.C., 14 March 1980

- "Tri-Service Manufacturing Technology Program Information System: Basic Description and Orientation," K. J. Wright and A. R. Dean, Logistics Management Institute, Washington, D. C., June 1982

- "Preliminary Data Element Dictionary for the Tri-Service MTP Data Base," K. J. Wright, Logistics Management Institute, Washington, D.C., June 1982

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TABLE 1-1. POTENTIAL MTPIS USERS

User Organization	Acronym
OSD	
- Office of the Under Secretary of Defense for Research and Engineering, Acquisition Management, Director of Industrial Resources	OUSDR&E(AM(IR))
- Office of the Assistant Secretary of Defense, Comptroller	OASD(COMP)
- Defense Logistics Agency-Defense Industrial Resources Support Office	DLA-DIRSO
ARMY	
- Department of the Army Staff	DA Staff
- Headquarters, U.S. Army Materiel Development and Readiness Command	HQ DARCOM
- U.S. Army Materials and Mechanics Research Center	AMMRC
- U.S. Army Aviation R&D Command	AVRADCOM
- U.S. Army Communications & Electronics Material Readiness Command	CERCOM
- U.S. Army Communications R&D Command	CORADCOM
- U.S. Army Electronics R&D Command	ERADCOM
- U.S. Army Tank-Automotive R&D Command	TARCOM
- U.S. Army Armament Materiel Readiness Command (Ammunition)	ARRCOM(AMMO)
- U.S. Army Armament Materiel Readiness Command (Weapons)	ARRCOM(WPNS)
- U.S. Army Armament R&D Command (Ammunition)	ARRADCOM(AMMO)
- U.S. Army Armament R&D Command (Weapons)	ARRADCOM(WPNS)
- U.S. Army Troop Support and Aviation Materiel Readiness Command	TSARCOM
- U.S. Army Mobility Equipment R&D Command	MERADCOM
- U.S. Army Natick R&D Command	NARADCOM

TABLE 1-1. (cont.) POTENTIAL MTPIS USERS

User Organization	Acronym
- U.S. Army Test & Evaluation Command	TECOM
- U.S. Army Materials & Mechanics Research Center	AMMRC
- U.S. Army Industrial Base Engineering Activity	IBEA
- U.S. Army Depots	-
Navy	
- Office of the Chief of Naval Operations	OPNAV-098
- Headquarters, Naval Material Command	HQ NAVMAT
- Naval Air Systems Command	NAVAIR
- Naval Electronic Systems Command	NAVELEX
- Naval Sea Systems Command	NAVSEA
- Field Activities of Systems Commands	-
- Naval Air Rework Facilities	NARFs
Air Force	
- Department of the Air Force Staff	Air Staff
- Air Logistics Commands	ALCs
- Air Force Wright Aeronautical Laboratories/Material Laboratory	AFWAL/MLT
- Air Force Systems Command/Armament Division	AFSC/AD
- Air Force Systems Command/Electronic Systems Division	AFSC/ESD
- Air Force Systems Command/Space Division	AFSC/SD
- Air Force Systems Command/Contract Management Division	AFSC/CMD
- Air Force Systems Command/Ballistic Missile Office	AFSC/BMO
Other Government Agencies	-
Industry	-
Academia	-

- "Manufacturing Technology--A Cost Reduction Tool at the Department of Defense That Needs Sharpening," General Accounting Office, September 1979

- "Department of Defense Automated Data Systems Documentation Standards," National Technical Information Service, Springfield, Virginia, 1977

1.3 TERMS AND ABBREVIATIONS

The following acronyms, terms and abbreviations are used throughout this Functional Description.

Term/Abbreviation	Definition
DBMS	Data Base Management System
DoDI	Department of Defense Instruction
EFFORT	A set of single- or multiple-year projects, each providing a unique technical deliverable, assembled as a single group for administrative convenience.
FD	Functional Description
GAO	General Accounting Office
IAC	Information Analysis Center
LMI	Logistics Management Institute
MT	Manufacturing Technology
MTAG	Manufacturing Technology Advisory Group
MTP	Manufacturing Technology Program
MTPIS	Manufacturing Technology Program Information System
OSD	Office of the Secretary of Defense
OUSDR&E	Office of the Under Secretary of Defense for Research and Engineering
PROJECT	A single- or multiple-year investment which provides a unique technical deliverable. A project may consist of several tasks (see definition below).
SUBTASK	A component of a task representing a discrete unit of work performed by a single organization.
TASK	A single piece of work funded in a single fiscal year.

SECTION 2. SYSTEM SUMMARY

2.1 BACKGROUND

The three Military Departments agreed in the late 1960s to pursue a co-operative program for reducing weapon system acquisition costs through the application of advanced manufacturing processes and techniques. The Manufacturing Technology Program in DoD was established as a mechanism for co-ordinating the planning and execution of manufacturing technology investments undertaken by governmental or commercial organizations under the sponsorship of the Military Departments. Each Military Department has its own MTP to address the production problems of that particular Department's materiel re-quirements. The DoD MTP operates as a focal point for MT funding, technology transfer among the Services and industry, and technical review of work in the MT area.

The objectives of the Program were stipulated in the "Statement of Prin-ciples for Department of Defense Manufacturing Technology Program," dated 14 March 1980.

"The Manufacturing Technology Program's objective is to significantly improve the productivity and responsiveness of the industrial base by engaging in initiatives which:

- Aid in insuring the economical production of qualitatively superior weapon systems on a timely basis.

- Insure that advanced manufacturing processes, techniques, and equip-ment are used to reduce DoD materiel acquisition costs.

- Continuously advance manufacturing technology to bridge the gap from R&D advances to full-scale production.

- Foster greater use of computer technology in all elements of manu-facturing.

- Assure that more effective industrial innovation is stimulated by reducing the cost and risk of advancing and applying new and improved manufacturing technology.

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- Assure that manufacturing processes are consistent with safety and
environment considerations and energy conservation objectives."

The MTP is considered an investment. Federal funds are invested in pro-
jects to apply innovative techniques in a production environment to reduce
production lead times or lower production costs for defense materiel. The
financial return on successful investments is realized through lower per-unit
production costs, shortened delivery processes, and a number of other
measures. Another important form of Program benefit is the exchange and
transfer of technical information developed through MT projects. Communicat-
ing this information can stimulate new ideas in the MT community. The chief
product common to all MT investments is manufacturing technology information.
That information is ordinarily conveyed through project reports, end-of-
project briefings and demonstrations.

Overall MTP management responsibilities are in the Office of the Director
for Industrial Resources, OUSDR&E(AM). The Assistant for Manufacturing Tech-
nology performs the functions of planning the Program, monitoring its execu-
tion and following up Program results. The nature of these functions is
described in greater detail in Section 2.3. The DoD Program manager has
several counterparts at various levels in each of the three Military Depart-
ments, performing similar functions for the administration of that
Department's MT program. The timely flow of Program-related information among
these entities is critical to the successful achievement of the MTP's object-
ives.

2.1.1 Current Problems

The importance of that data flow was highlighted by a General Accounting
Office (GAO) report produced in 1979, "Manufacturing Technology--A Cost Re-
duction Tool at the Department of Defense that Needs Sharpening." In the
report GAO observed that DoD lacks information about how well the Program is

working and about benefits derived from MT investments. The lack of information stems from the fact that OSD and the Services do not have a systematic method for exchanging and storing such information. The GAO recommended that OSD "develop and institute a uniform, centralized management data system that would allow program managers to evaluate and control program effectiveness." The proposed MTPIS will implement that recommendation.

The MT programs administered by the Services employ automated data systems to aid program planning and execution. Both the Army and the Navy have working information systems that are designed specifically for their respective MT program management needs. The Air Force has no system that is specifically dedicated to the MT application, but it does store some program-related data in the Air Force Management and Scientific Information System (MASIS) and Consolidated Air Force Wright Aeronautics Laboratory Management Information System (CAMIS) systems. Air Force management is considering establishing an MT information system comparable in scope to those of the other Services. The proposed MTPIS for OSD will have to interface with the Services' systems, so those systems will need some revision to make the interfaces possible.

2.1.2 Project Development

Preliminary analysis work on the OSD MTP information system commenced in 1979 in the Office of the Assistant for Manufacturing Technology. Much of the information about processes, data requirements and definitions incorporated in this FD was produced by OSD staff. In 1981, the Logistics Management Institute (LMI) was tasked by OSD to develop a system design for MTP information system.

To gain an understanding of the information requirements from the Services' perspective, LMI worked with Navy representatives during 1981 to design a Navy MTP information system. Subsequently, LMI worked with OSD staff

to analyze the OSD information requirements. A prototype Tri-Service MTP information system, built from fabricated test data, was implemented at the Defense Technical Information Center (DTIC). The prototype system, though limited in scope, demonstrated the intent and scope of the OSD requirements.

During 1982 DoDI 4200.15, which defines policies for the MT Program, underwent revision to incorporate a number of OSD information requirements and data definitions applying to the Military Departments. Although the draft revision to DoDI 4200.15 was still undergoing interservice coordination at the time this FD was written, the role of the MTPIS is expected to be similar to that specified in the draft revision.

Also during 1982, representatives of the Services' programs were assigned to a Tri-Service advisory group instituted by OUSDR&E. The advisory group was tasked to develop a plan for implementing the MTPIS and to define how the OSD information requirements would be met by the Services. At the time this FD was written, the advisory group was still reviewing data requirements and had not yet formulated an implementation plan. Therefore, a number of matters discussed in this FD will be subject to change to reflect the recommendations of the advisory group. Portions of this FD contingent upon advisory group consensus are identified to facilitate updating this document.

2.2 OBJECTIVES

The objective of the proposed MTPIS is to provide OSD and Service staff members a tool to strengthen Program management's performance in planning, programming, budgeting, executing, documenting benefits and diffusing technology throughout the industrial base. The system is intended to assist MTP management in a number of specific areas.

- Review of the technical merits of proposed MT investments.

- Allocation of MT funds to proposed investments.

- Performance review and fiscal review of ongoing MT projects.

- Tracking benefits achieved through the implementation of MT on the production line.

- Dissemination of new information produced under the Program throughout the MT community.

2.3 EXISTING METHODS AND PROCEDURES

The MTP management in OSD currently has no automated system for processing Program-related information. This section briefly outlines the manual methods and procedures now employed by the key organizations involved in managing the Program.

The major categories of information flow among organizations in the MT Program are depicted in Figure 2-1. Most of the information is transmitted in printed form; the remainder is transmitted orally in telephone conversations or meetings. For example, investment proposals are submitted on Department forms by the Military Departments to OSD MTP management for review. Questions about the proposals may be transmitted by telephone calls from OSD to the subordinate commands responsible for the technical work proposed by the Services.

Figure 2-2 shows the information flow from a different perspective. The three major functions performed by MTP management in OSD are: plan the Program, monitor its execution, and follow up the implementation of Program results. Major information flows between the organizations and these three functions and information flows among these three functions are illustrated to highlight the logical dependencies upon the information.

As an example, the function entitled "Followup on Implementation" requires information from the "Monitor Execution" function about which project results are entering the implementation stage. Results from implementation

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FIGURE 2-1. INFORMATION FLOW AMONG ORGANIZATIONS WITHIN
THE MANUFACTURING TECHNOLOGY PROGRAM
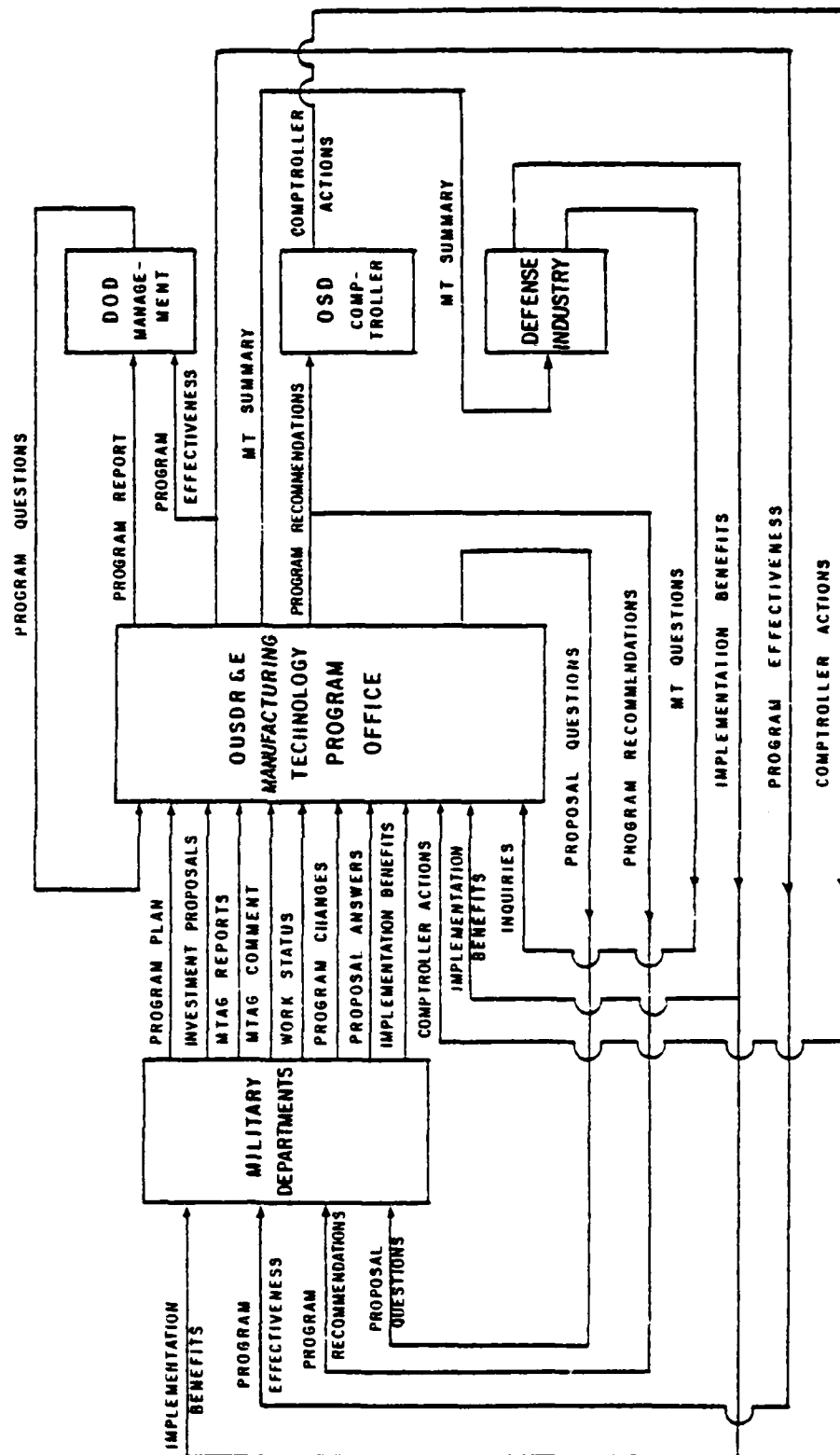
FIGURE 2-2. FUNCTIONAL INFORMATION FLOW WITHIN
THE MANUFACTURING TECHNOLOGY PROGRAM
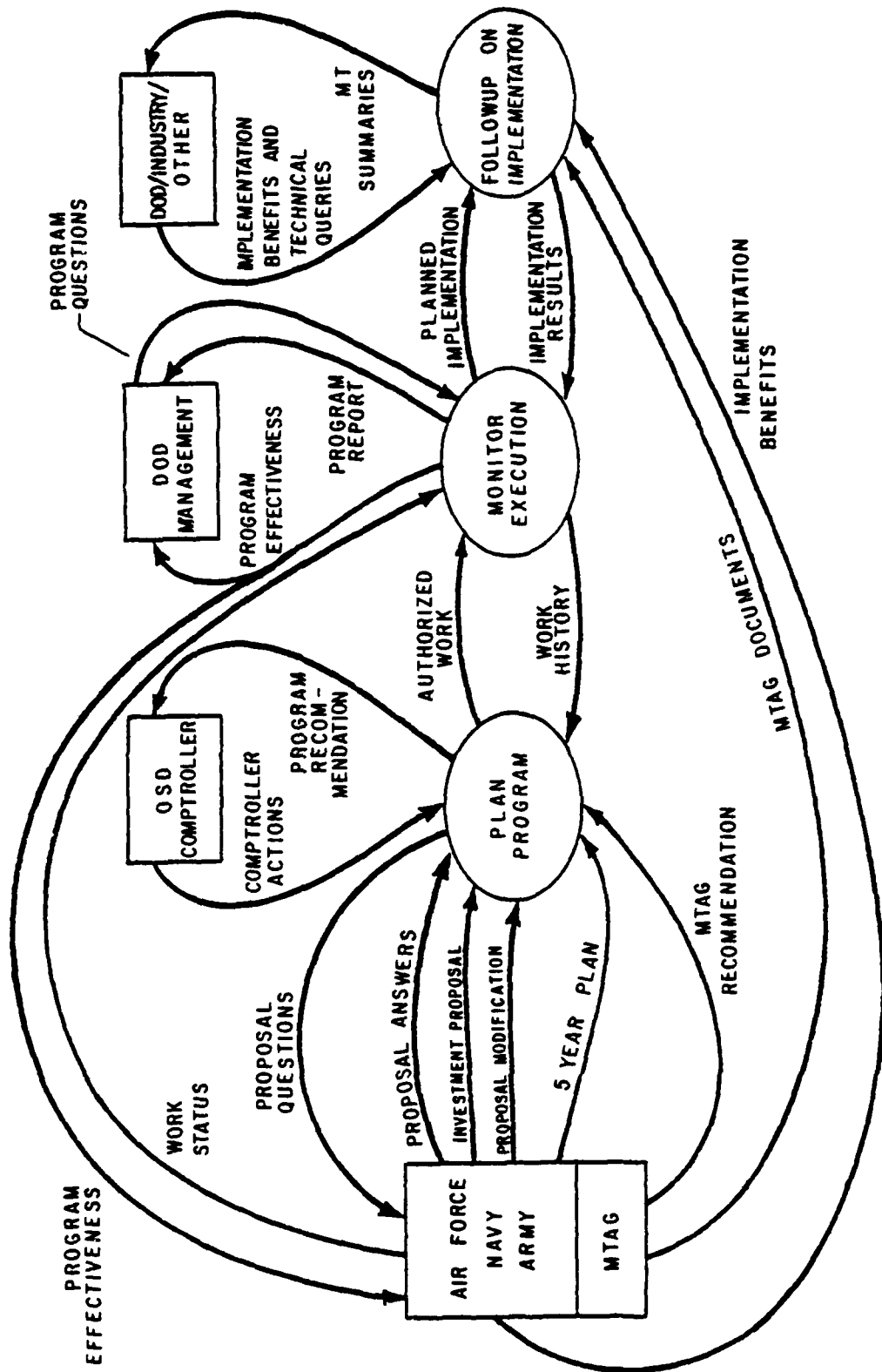
are fed back to the "Monitor Execution" function to make adjustments to the Program based on successes and failures. Government, industry, and other organizations provide information to the MTP managers about benefits arising from successful implementation efforts, as do the Military Departments and the Manufacturing Technology Advisory Group (MTAG). In performing the "Followup on Implementation" function, MTP managers receive technical queries from government, industry, and other groups in the MT community and distribute information about the Program to those organizations.

These two information flow diagrams present an idealized view of the MTP management process. The Military Departments have implemented the DoDI 4200.15 in different ways, tailored to their individual management practices and styles. Program structures differ radically from Service to Service. Service-specific technical and administrative terminology has evolved. Reports to OSD, when they exist and even when standardized within a Service, are not standardized among all Services. These factors make comparison of Program information submitted by the Services difficult and place an unacceptable burden upon OSD Program managers. Also, financial information and benefit tracking information are not addressed by the Services in a uniform way.

From OSD's perspective systematic procedures for obtaining some required categories of information do not exist. Each Service does have methods for obtaining such information internally, albeit often manually. Some procedures, such as the Army's, are automated; others are not automated and depend upon informal communications. For MTP managers in OSD, this raises serious questions about the completeness and validity of information furnished.

Fund requests submitted to OSD by the Military Departments are prepared by manual typing methods or local word processing. The process of submitting, reviewing, commenting and revising fund requests takes place by means of paper

forms through all channels between the Military Departments and OSD. When submitted fund requests require modification, as they often do, the modifications are performed manually. This process is time-consuming. The review process during budget and apportionment periods sometimes requires several iterations of the submission/revision cycle. The use of hard-copy documents impedes the performance of management at all levels.

Another major deficiency of the present methods and procedures is the lack of information control. Using hard-copy reports exclusively, MT managers may not have access to the most current information about a project. The existing system depends upon manual processing at all stages, from document preparation to distribution and storage. With participating offices located across the country, effective control of the paperwork is virtually impossible without introducing extensive regulatory controls that would hamper Program effectiveness.

2.4 PROPOSED METHODS AND PROCEDURES

The proposed MTPIS is an automated data processing system to replace most of the existing manual methods and procedures of information processing being used by MTP management in OSD. The system will provide automated storage of and access to Program-related information. It will speed access to the most up-to-date and complete plans, status and benefits of the Program.

The MTPIS will consist of the following major components.

- A central data base resident on a host computer system. It will serve as a central repository for data related to planned, active and completed MTP investments. The data base will serve both OSD and the Military Department MT managers as a common data source for summaries of the Program. It will also provide accomplishment data to industry through the planned MT Information Analysis Center (MTIAC).

- Support hardware and software. Where possible, packaged software will be used to maintain, provide access to, and generate output products from the MT data base. Data communications capabilities (terminals, communications hardware and software) will make it possible for remote users throughout the MT community to access portions of the data base to which they are authorized.

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The role of the proposed MTPIS is illustrated in Figure 2-3. The central MTP data base will primarily serve MTP managers within OUSDR&E by providing a central repository for information about investments in each of their life cycle stages. The Military Departments, which propose and execute MT projects, will enter five-year plans, investment proposals and proposal modifications into the data base using data base management system (DBMS) utilities. During the review process for proposals, the responsible MTAG subcommittee members will be able to use the DBMS to examine technical aspects of proposals and enter their comments and recommendations into the data base. When OSD MTP managers want to review investment proposals (for example, during budget and apportionment reviews), they will retrieve the relevant data from the data base, search the data base for related work in a technical area, and enter recommendations and comments into the data base.

A recommended Program funding scenario could be obtained by OASD(COMP) staff directly from the data base. Information about Comptroller actions on fund requests could be entered by them into the data base in order to speed the communication process to other OSD managers and to the Military Departments. OSD managers will be able to obtain answers to many of their questions about Program plans and status by searching the data base using a "user friendly" query language. Standard reports on Program effectiveness will be generated by software from the MTP data base.

Other Program management functions will employ the MTPIS as an information source, a report generator and a means for interactive communications with remote sites. Industry, which is ultimately the end-user of MT information, will be served in two ways. First, companies doing work in the MT Program will have dial-up access to the system so that they can produce summary reports from the data base, search for technical information about

FIGURE 2-3. MTPIS SYSTEM OPERATION IN MTP MANAGEMENT PROCESS
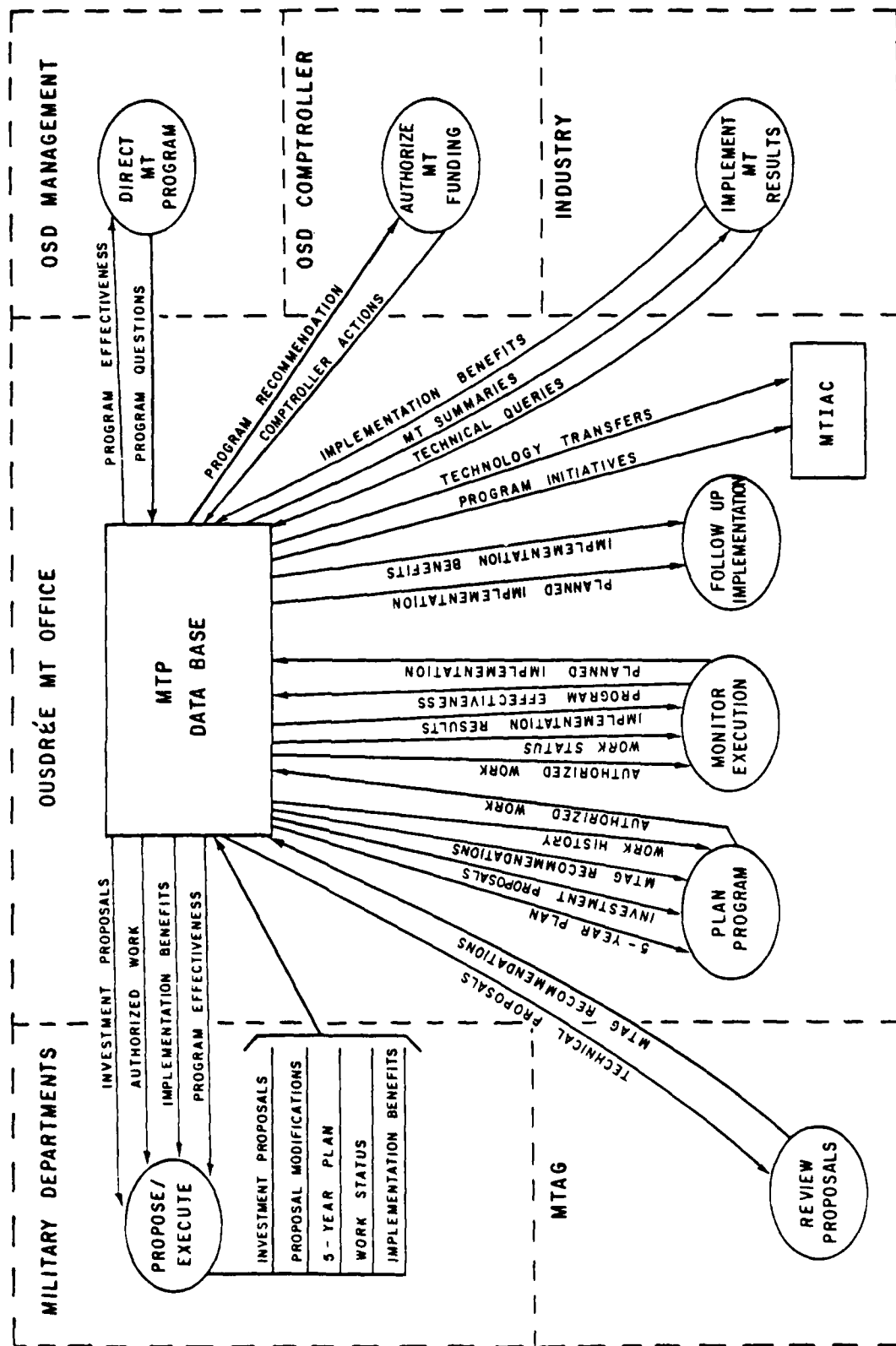
work in the Program, and enter data into the data base about how they are using MT results and the benefits they produce. Second, the MTPIS will provide data about Program plans, technical reports and work status to the proposed MTIAC. To support the MTIAC as a technical report clearing house for the MT community, the MTPIS will provide bibliographic cross-references to investments in the Program.

2.4.1 Summary of Improvements

The use of the MTP data base will benefit the MT programs of the Services in several ways.

- Shortened Lead Time. The lead time for fund request submissions should be shortened by the elimination of preparation and shipment of manual forms to Service and OSD managers. The shortened lead time will allow greater flexibility in the planning and budgeting of each year's program. This will, in turn, allow Program managers to be more responsive to the needs of end users.

- Improved Timeliness in Planning and Review. The system will improve the timeliness of planning information made available to OSD and the Services. By putting technical proposals into the central data base, the proposing organizations will benefit from the sharing of technical ideas. This will help planners recognize areas of potential duplication of effort early in the planning process. The on-line storage of proposals will help expedite the proposal review process by OSD and the MTAG technical subcommittees, because the distribution of this information will be automated.

- Improved Tracking and Updating. The process of tracking the progress of ongoing projects will be improved. Status information should be more timely in the automated system. Use of the data base updating procedures to replace the existing manual formats will make the process of updating status information for a project easier.

- Uniform Data. The use of common data definitions and data formats will result in a uniform set of data among the three Services' programs. This will facilitate the preparation of reports covering the entire MT Program. Improved comparability of project work will make possible better-informed budget decisions. The uniformity of data will also facilitate dissemination of knowledge throughout the MT community.

- Accessibility Information. Managers and engineers working in the MT Program will spend less time responding to routine inquiries from industry and other MTP participants. By putting the most frequently used information into a central data base, Program managers will make

it directly available to users through the inquiry capabilities of the DBMS supporting the data base. As a result, they will be able to concentrate their efforts on productive rather than administrative activities.

2.4.2 Summary of Impacts

The following subsections describe the expected equipment (hardware), software, organizational, operational and developmental impacts of the MTPIS.

2.4.2.1 Equipment Impacts

A moderate size minicomputer or mainframe computer system will be required for the central system. Because the size of the proposed MTPIS does not justify a dedicated computer, the purchase of that equipment is not necessary. The most likely approach would be to acquire computer and telecommunications services from an existing government installation or commercial vendor to meet the performance requirements discussed later in this FD.

Most system users will be able to access the system with in-house ASCII terminals and public telephone services. Those system users (such as the MT Office of OUSDR&E and the MT Program offices of the Military Departments) using the system's full-screen editing capabilities for data base updating will need intelligent terminals that are compatible with the host computer system. Those users requiring graphic output from the system will need access to graphics terminals or plotters.

The proposed MTPIS will not require modifications to the computing equipment currently supporting the data systems with which the MTPIS will interface. The actual interface requirements have yet to be determined by the Tri-Service Advisory Group. The transfer of data from the Services' MT systems to the MTPIS will possibly take place using some common media, such as nine-track magnetic tape.

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2.4.2.2 Software Impacts

The MTPIS will be based upon a DBMS package meeting the requirements discussed in Section 4 of this FD. If a suitable computer installation with such a DBMS is not available, a DBMS package may have to be purchased or leased. It will also be desirable for the system to have a graphics package, which may have to be purchased or leased.

Software will be developed for the production of the output products described in this FD. Software will also be written to generate screen input formats, to perform data editing tasks, and to perform standardized searches of the data base.

There will be several major impacts upon the data systems currently being used by the Services to support their MT programs. First, those data elements required by the MTPIS, not in the existing systems, will have to be added to their data bases or be prepared manually and converted to the MTPIS standard for use in updating the MTP data base. Such changes to the data bases' structure and content may necessitate modification to the software that accesses and maintains the data bases. Finally, interface software will have to be implemented for each of the Services' systems. For example, it may be necessary to develop programs to extract data from the data base, reformat the data and write it on a magnetic tape for shipment to the MTPIS computer site.

2.4.2.3 Organizational Impacts

The MT office in each Military Department will provide the resources necessary to interface with the MTPIS. That function will entail: (1.) the acquisition, data entry and editing of data items not currently supported by existing data systems; (2.) the assurance of accuracy and completeness of data provided to the MTPIS; (3.) adherence to the update schedules established for the MTPIS; and (4.) coordination of new system developments between that Service's data systems and the MTPIS.

OSD will require a System Manager for planning and managing the development, operation and maintenance of the MTPIS. The System Manager function will not be a full-time staff assignment within OUSDR&E; it will most likely be filled by staff assigned to the data center where the MTPIS will reside (either in-house or contractor facilities), staff of the Air Force Data Services Center (AFDSC), or staff of the Washington Headquarters Service/ Directorate of Computer Support (WHS/DCS).

Terminology of each Service's MT program will have to be adapted to be consistent with that of the MTPIS. The standard definitions to apply throughout the MT Program will be included in the revised DoDI 4200.15. One of the tasks assigned to the Tri-Service Advisory Group is to develop plans for the Services to implement this requirement.

The impacts upon the Services' MT Programs will depend upon the recommendations developed by the Tri-Service Advisory Group. Some of the anticipated impacts are listed below.

A.   The Air Force will have to acquire and maintain more extensive planning and implementation data for MT investments. Their current data systems meet only a small percentage of OSD's data requirements.

B.   The Army will need to acquire and maintain several new data elements in their data system. Their data base may require some restructuring.

C.   The Navy data base will need several additional data elements. Some of the Navy data base's long-text fields, when provided as input to the MTPIS, will have to be abstracted manually unless changes are made to the Navy's existing input procedures.

2.4.2.4. Operational Impacts

The MTPIS will be operated at a central computer site. It is expected that the computer site selected for implementation will be an already established government or commercial installation. The workload placed on that facility by the MTPIS will cause no operational changes to that facility. Some of the criteria for selecting the facility include file backup procedures, availability hours per day, etc.

The impact upon the operation of the MT data systems being used by the Services will depend upon the recommendations developed by the Tri-Service Advisory Group. At least two major impacts can be identified at this time.

A. Periodic updates to the MTP data base will be made with data maintained by each Service's MT data system. The Services will provide a magnetic tape from their data centers at required intervals.

B. Additional data required by the MTPIS will be acquired and maintained by the Services for the periodic updates. This may necessitate additional data collection, data entry and editing work by the Services.

2.4.2.5 Development Impacts

The major development activities that must be accomplished by OSD are the following:

A. Acquire computer facilities and software packages. The government or commercial computer center and data communications system that will support the MTPIS must be selected. Software packages meeting system requirements that are not present at the selected computer site must be either leased or purchased.

B. Develop application-specific software. The software to generate standard MT reports and graphics must be designed, programmed,

tested and documented. The MTP data base must be designed using the DBMS selected for this application and data base update and maintenance procedures must be developed. It is expected that this work will be performed by contractors, AFDSC or WHS/DCS.

C. Perform initial load of data base and system test. Data for all proposed and active MT investments will be obtained from the Services and loaded into the MTP data base. The MTPIS will then undergo a thorough test of its capabilities to ensure that its performance requirements have been met.

The development impacts upon the Services depend upon the recommendations of the Tri-Service Advisory Group. The following kinds of impacts can be expected:

A. An effort will be undertaken to acquire data for the initial loading of the MTP data base. The Services will be responsible for the acquisition, data entry and editing work required to provide the necessary data on planned and active MT investments.

B. Some modifications to existing data systems will be necessary to accommodate the OSD data requirements.

C. Software and procedures will have to be developed by each Service to provide the data for periodic updates to the MTP data base.

2.5 ASSUMPTIONS AND CONSTRAINTS

The following major assumptions and constraints have been made in the development of this FD:

Assumptions

A. The Tri-Service Advisory Group will produce recommendations for a methodology of obtaining data for the MTP data base from the MT offices of the Military Departments and ensure that those recommendations will be acceptable to OSD and the Military Departments.

B.   The Military Departments will cooperate with OSD in implementing the recommendations of the Tri-Service Advisory Group.

C.   The Military Departments will perform the development, operations and maintenance activities necessary to interface their respective data systems with the MTPIS.

D.   FY83 funding will be made available by OSD and the Services to perform the development work on the MTPIS.

E.   OSD will be able to acquire the necessary labor support for MTPIS development from either commercial contractors or government support activities such as AFDSC or WHS/DCS.

F.   Required hardware and software packages can be obtained as services purchased either from a commercial contractor or from a DoD organization.

Constraints

A.   The MTPIS must be fully operational by the end of FY83.

B.   None of the data stored in the MTP data base will be classified.

C.   The implemented system must be consistent with the existing DoD policy and standards.

SECTION 3. DETAILED CHARACTERISTICS

3.1 SPECIFIC PERFORMANCE REQUIREMENTS

The DoD Manufacturing Technology Program Information System will consist of a central Tri-Service data base (see Figure 3-1) that will support on-line interactive data retrieval and report generation. This MTP data base will contain data supplied by each Service to be made available to the MT community. The MTPIS users will be able to query the data base to obtain information concerning specific projects on an as-needed basis or to obtain general profiles of planned or ongoing work in the Program.

The proposed MT data base will be designed to meet the OSD objectives stated in Section 2.2. This will be accomplished by an existing commercial or government data base management system (DBMS) fulfilling the following requirements:

A. Interactive data base query, retrieval and display. MTPIS users must be able to search the MTP data base in an on-line interactive mode. The DBMS must provide the users with a query language using an English-like syntax that allows Boolean combinations of search arguments. The query language that is provided must be "user-friendly," in that it must provide a "help" function for MTP users when they reach an impasse and produce comprehensive diagnostic messages with errors clearly explained.

B. Text processing capability. The DBMS must provide the ability to store and process text data elements containing up to 1500 characters. The system must retrieve these data elements by root and proximity searches.

3-1

FIGURE 3-1. MANUFACTURING TECHNOLOGY PROGRAM
INFORMATION SYSTEM (MTPIS)
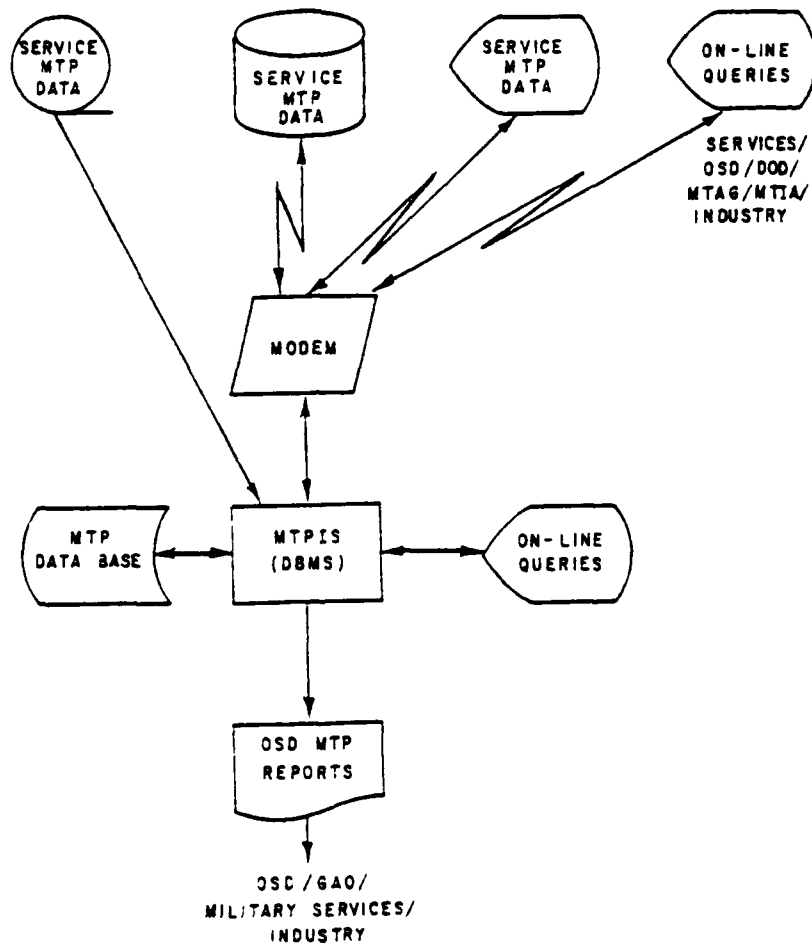
C. Numeric and alphanumeric data storage. The DBMS must support the storage and retrieval of numeric and string data elements.

D. Data base security. The data base administrator must have the capability to define security/access requirements by application, record type and data element. The DBMS or its associated software (data dictionary) will accomplish this.

E. Automated data dictionary. The DBMS or companion software must support an on-line data dictionary that will allow the data base administrator to create, modify or delete data element definitions for the MTP data base. The data element definitions will include name, description, source, usage and relationship information.

F. Integrated report writer package. The report writer software of the DBMS should permit users to define and store report formats for later use in an on-line mode. This software should be capable of allowing persons not oriented to data processing to use the system with minimal training. The MTPIS user must be provided the means to produce reports that require extensive data manipulation and formating.

G. Procedural language interface. The DBMS must allow interactive and batch data base access from application programs written in a high-level language, such as COBOL, PL/1, or FORTRAN.

H. Data base update. The DBMS must provide update software and procedures that automatically validate input data according to user-specified criteria, lockout records to prevent simultaneous update actions from multiple users, and produce audit trail reports depicting all data base activity.

3-3

The remaining requirements are classified as "software/personnel requirements" rather than "DBMS requirements," but they are essential in meeting MTPIS objectives:

A. Teleprocessing system. The teleprocessing system software must provide interactive, on-line processing with the host computer system/DBMS for multiple simultaneous MTPIS users (maximum of ten). This teleprocessing software must be capable of serving a variety of terminals with a response time not to exceed five seconds for an average search command.

B. Electronic mail. The DBMS must be compatible with or provide an electronic mail facility. This package must function at the user account and terminal level.

C. File maintenance system. The host computer system must have a file maintenance system for user mass-storage files in addition to the files managed by the DBMS. The capability must provide for automatic backup and restoration of data files.

D. Graphics package. The DBMS must provide for or be compatible with a graphics package. This graphics package must produce "business graphics" outputs such as bar graphs, line graphs, and histograms from data generated from the MTP data base.

E. Data base administrator. The MTPIS must have a data base administrator with knowledge of the MTP reporting requirements and in-depth knowledge of the DBMS used by the MTPIS.

F. System software support. The services of a systems programmer/analyst may be required periodically to support and maintain the DBMS software and its related software. This person must be available on an as-needed basis to respond to critical software failures during system operation.

3-4

G. <u>System manager</u>. A senior-level analyst will be required to manage the development, maintenance and operation of the MTPIS. The System manager must have in-depth knowledge of the MTP information requirements and the capabilities of the software/hardware environment used.

3.1.1 Accuracy and Validity

Data elements representing dollar amounts (such as FY01 Amount Planned in the Project Review Report, Appendix A) are to be stored as real numbers and represent units of thousands of dollars. The accuracy requirement for such fields is one digit to the right of the decimal point (representing hundreds of dollars). Computations using these amount fields must preserve that level of accuracy.

Data elements representing dates (such as Planned Completion Date) are to be stored in YYMMDD format as either integers or character strings. Computations using dates (such as the calculation of project slippage) must preserve accuracy to the month level.

In general, other computations involving numeric fields must preserve accuracy to the units level (for integer data) or to the tenths level (for real data). The accuracy requirements of data are defined in the "Preliminary Data Element Dictionary for the Tri-Service MTP Data Base (see Section 1.2)."

All data that are entered will be automatically verified by the DBMS software to ensure the integrity of the data base. Data will be entered in stages. First, each Service and OSD will load its MTP data into the data base to create an initial baseline. Second, the data base will be continually updated and maintained by each Service and OSD. At each stage of the MTP life cycle, each organization will be responsible for the accuracy and validity of its input into the data base.

3-5

Accuracy of transmitted data will adhere to the standards defined in the Data Element Dictionary mentioned above. However, data may be transmitted electronically by use of communications lines or physically delivered on magnetic tape or disk. The protocol for transmitting data will adhere to the standards defined by the hardware and software environment selected. To ensure compatibility and accuracy of data transmission, the users will adhere to the standards of the host system.

3.1.2 Timing

The timing constraints placed on the MTPIS are:

- The ability to respond in five seconds or less to an average on-line interactive query with up to ten users working at any given time.

- The ability to receive and process a batch request, produce the results, and transmit the results in one working day.

- The ability to produce the OSD-required standard reports according to the schedule established by the System Manager.

- The ability to respond to data base schema modifications on an overnight or weekend time period.

- The ability to restore the data base or its associated software to a different baseline in an overnight time period.

- The ability to recover from an intermittent system failure within two hours.

- The ability to recover from a catastrophic system failure on an overnight time basis.

It must be noted that the above timing estimates and requirements depend upon the degree to which hardware, software, installation, and personnel are shared.

3.2 SYSTEM FUNCTIONS

This section discusses the individual functions as they relate to the specific performance requirements discussed in Section 3.1, and how the MTPIS will accommodate those requirements.

3-6

3.2.1 Data Collection and Preparation

The collection and preparation of MTP data will be the responsibility of the individual MTP offices in the Military Departments and OSD. There are three primary methods of entering data into MTPIS (See Figure 3-2). They are:

- Collect, format, sort, verify and transmit data electronically in a batch mode. The program(s) that load the data base will be executed by MTPIS support personnel.

- Collect, format, sort, verify and transmit data on magnetic tape or disk. The program(s) that load the data base will be executed by MTPIS support personnel.

- Collect, enter and verify data on-line in an interactive mode using a data terminal. This method is preferred on low volume data entry.

3.2.1.1 Batch Data Entry

System users having large volumes of input data for the MTP data base must have the capability for preparing and transferring the data in batches. Those organizations (such as the Army and Navy MT offices) having automated systems will extract data from their data bases to meet some of the MTPIS input requirements. The extracted data will either be put in machine-readable form (on magnetic tape or disk) and shipped to the host MTPIS computer site or be transmitted electronically on data communications equipment to the host computer.

Input data not maintained by the Services' MT systems may be prepared in batches using off-line equipment such as key-to-tape or key-to-disk devices. Intelligent terminals may be employed to perform data entry using input screens and local magnetic storage media such as disks or tapes. After preparation, data batches will be transferred to the host computer in the manner described in the preceding paragraph.

3.2.2 Edit and Load Data

All data entered into the MTP data base will be subject to edit criteria checks that are built into the DBMS data dictionary. These edit checks will

FIGURE 3-2.   MTPIS FUNCTIONS
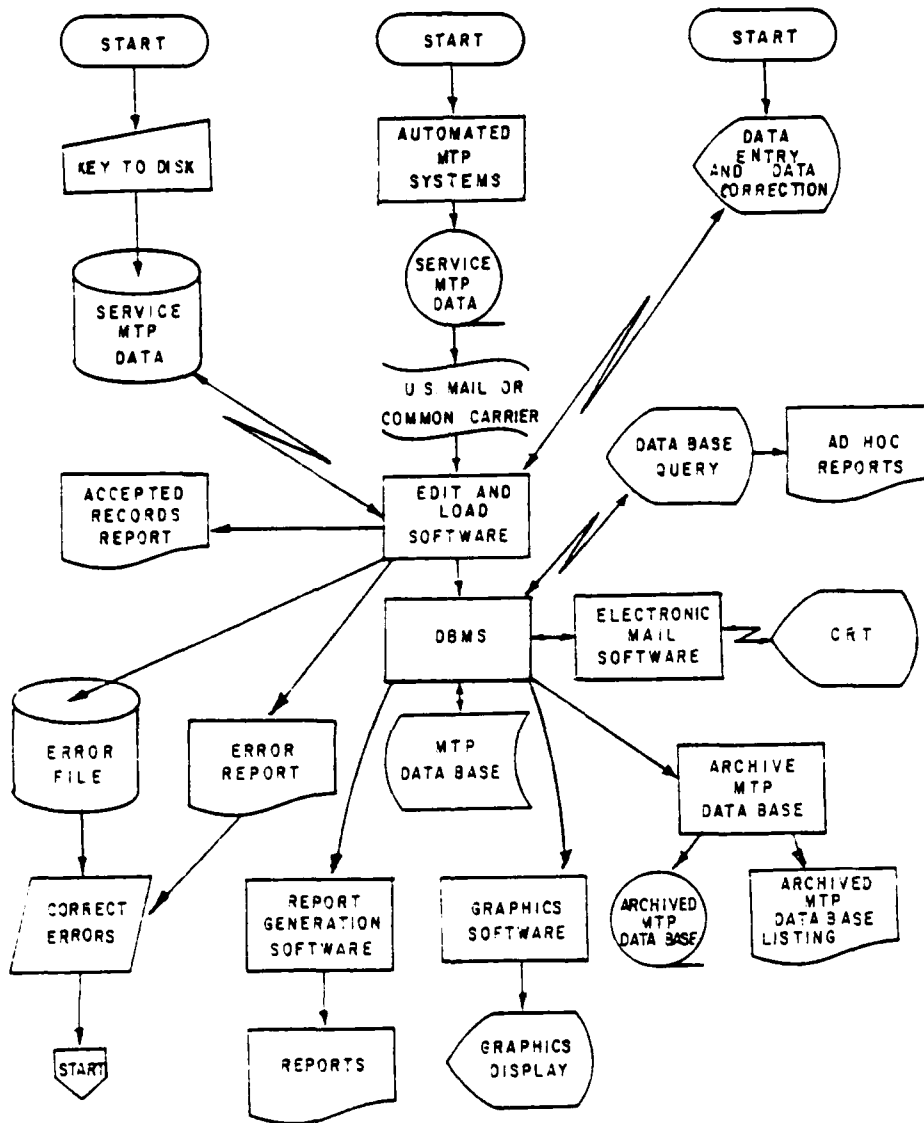
adhere to the rules set forth in the Preliminary Data Element Dictionary. However, additional edits will be made using tailored applications software. These checks (duplicate data, relational, logical, security, and others that are application or data dependent) will be made to ensure data base integrity.

All errors that are detected will be displayed, along with the data associated with them. These displays will be in the form of hard-copy error listings or CRT displays. All data found to be in error will be written to an error file for subsequent correction and entry into the MTP data base by the Service entering the data. Input data that do not contain errors will be loaded into the MTP data base. All data that are entered into the MTPIS will be shown in an edit and load report. Copies of all reports will be maintained as an audit trail of the MTPIS life cycle.

3.2.3 On-Line Data Entry/Retrieval

On-line access to the MTPIS will provide the users with the ability to query the MTP data base, display the results, and update or add information to selected records. Certain MTPIS users will also have the capability to perform the above functions using predefined screen formats. These screen formats will be designed to conduct a prompted interactive dialogue with the user to locate, display, modify or add data to the data base.

3.2.4 Standard Report Production

MTPIS software will be designed to produce a set of standard MTP management reports. The report names are listed in Table 3-1; sample report layouts appear in Appendix A. The report writer software will operate in on-line mode under the control of DBMS command language. Authorized users will be able to use the report writer software to produce standard reports in hard-copy or video-display form depending on needs.

TABLE 3-1. MTP REPORTS

Report Title	Specific Use
General Reviews of MTP Activities	
Effort Review	Investment overview
Project Review	Fund request decision and performance indicator
Task Review	Fund request decision
Subtask Review	Technology transfer and diffusion pointer
Funding Reviews	
Effort Funding Review	Investment overview, investment decision, and performance indicator
Project Funding Review	Investment overview, fund request decision, and performance indicator
Summaries of Investment Activities	
Program Summary	Planning/execution effectiveness indicator
Reprogram Summary	Investment awareness and program direction
MT Service Summary	Service MT management indicator
Thrust Area Summary	Long- and short-range planning effectiveness
Implementation Benefit Summary	Program marketing and investment verification
Accomplishment Summary	Program marketing and investment verification
Effectiveness Reports	
Execution Effectiveness	Technical performance indicator
Expenditure Effectiveness	Resource allocation indicator
Technical Effectiveness Review	Investment return and results indicator
Recommendation Reports	
Investment Recommendations	OSD Comptroller and Service coordination

3.2.5 Ad Hoc Report Production

The DBMS report generation facility will enable MTPIS users to develop and store software to output reports tailored to their specific needs. Users will be able to access the data base and produce such reports while on-line to the system.

3.2.6 Data Base Archiving

A machine-readable image of the MTP data base will be created prior to and after each major data base update. That data base image will be used to restore the data base in the event of system failure. A hard-copy dump of the data base will also be produced at the same time as a basis for reconstructing the data base in the event of a catastrophic system failure. The system must provide the System Manager a capability to institute additional safeguards as they become necessary (for example, monthly data base image to capture on-line update activity).

3.2.7 Data Base Maintenance

The MTPIS must provide the means to perform routine maintenance tasks on the MTP data base. These include: file maintenance, backup/recovery, usage monitoring, audit trail for updating, etc. The DBMS selected for the MTPIS application should provide standard utilities to accomplish these maintenance tasks and require no extensive custom software development.

3.2.8 Electronic Mail

The system users should have the capability of establishing a two-way communications path. Electronic mail software allows the system user to send and receive correspondence from other users of the MTPIS. Commands are provided to send and receive mail. Special messages appear when the user signs on, indicating the presence of mail. When the user wishes to read mail, an acknowledgment must be issued. This acknowledgment will be sent to the

author of the letter along with the date and time that the letter was received. The letter size should be a maximum of 120 lines or five pages in length. The user has the ability to save or delete the letter once it has been read. An important feature of electronic mail is the ability to send mail to one individual, several individuals or all users of the system. This electronic mail package must be capable of generating statistical reports on the software usage.

3.2.9 Graphics

The MTPIS will provide its users with a software package to generate graphic output. This software will allow the use of English-like control language to produce bar graphs, line graphs and histograms. This output will be displayed at a user's graphics terminal or plotted on hardcopy. Software that is used to generate these outputs must possess the capability of being stored and recalled for execution at a later time.

3.3 INPUTS-OUTPUTS

Included in this subsection are descriptions of the inputs, outputs and data used to:

1. Develop a standard set of terms to describe program elements within each of the MT programs of the participating Services.

2. Establish uniform data reporting requirements and procedures for the Services.

3. Allow access to the MTP data base by the DoD MT community. This access, if authorized, will be in the form of on-line queries/ updates and batch input and output.

3.3.1 Inputs

The source of the MTP data base inputs will be the DoD MT community. Several classes of input data have been identified including:

- Investment identification: Effort, project, task identification numbers, Service and command, and fiscal organization.

- Investment funding: Current budgeted, obligated and expended amounts and totals to date.

- Problem to be solved: Problem, solution, approach, scheduling, predicted benefits and technical area.

- Organizational involvement: reviews, recommendations, approvals, and dates.

- Implementation: Plan, deliverables, savings, DoD hardware affected end-of-contract information, location of hard-copy project reports.

- Historical data: earlier work accomplished, funds expended.

The individual data elements are defined in detail in the "Preliminary Data Element Dictionary for the Tri-Service MTP Data Base." Most data will be entered into the MTP data base in a batch mode. The methods available for providing these data are described in a preceding section on system functions.

The preparation of input batches cannot begin until record layouts, tape or disk characteristics and telecommunications protocol have been defined. Those requirements are dependent upon the final choice of a hardware/software environment for the MTPIS and upon the actions taken by the Tri-Service advisory group. At the time this FD was written, the Tri-Services Advisory group had not defined data elements and specifications could not be finalized.

The submission and entering of MTP data into the data base will occur in phases. The three basic phases of entering data are:

- Initial loading of the data base. This will consist of assembling information on MT investments that are planned, ongoing or proposed at the time the system starts up. These data will be either extracted from existing data systems or keyed into machine-readable form. This information will then be entered into the system and verified. This initial loading of the MT data base represents the bulk of the work required to make the data base operational.

- Loading historical overviews. These data are concerned with implementation information, such as wh ,appened, who has the results, what it cost, who is receiving the benefits, and how they are being used. Many completed MTP investments have provided lasting benefits to both civilian and military users. The MTP data base will serve as a central repository for this information. These data will be entered on a project-completion basis once the initial data loading is completed.

- Maintaining current MT investment information. This requires that data be entered and maintained at the effort, project, task and sub-task levels. These data are entered on a periodic basis as the investment progresses through its life cycle. These data should be entered as they become available to ensure that the MT community is kept abreast of work that is of interest.

3.3.2 Outputs

The MTP Data Base will produce three types of outputs:

- Reports, specifically designed for OSD and Service users, to disseminate MTP information to the MT community and to furnish summary management information about the Program. Table 3-1 lists the report titles and their specific use. The sample report formats and contents are shown in Appendix A.

- Screen displays designed to display data retrieved from the MTP data base. The data that are displayed will result from ad hoc requests using the on-line query capability or from previously defined and stored statements (macros) requesting specific data groups. The user will have the capability to get hard-copy printouts of these reports by executing an additional set of instructions.

- Graphics designed for OSD users in the form of histograms to depict programming, planning, planning summary, implementation, coordination, and effectiveness of the MTP. These outputs will be used in conjunction with MTPIS reports to give the total picture of the MT program's status. See Appendix A for an example of each standard graphic output. The software used to generate these graphics will be stored in the system for on-line use. Graphics software will also be available to generate graphic output for special "one-time" requests.

All generated outputs will be carefully reviewed by the originator using whatever means necessary to ensure the integrity of the data and report before the information is distributed.

3.4 DATA CHARACTERISTICS

The data elements to be stored in the MTP Data Base are defined in the "Preliminary Data Element Dictionary for the Tri-Service MTP Data Base." The data elements contained in that document were selected by the MTP managers in

OSD to establish uniform data reporting requirements and procedures for the DoD MT community concerning:

- Proposed Investments

- Funding Status

- Work Status

- Implementation

- Benefits

These data elements describe the investments in the Program that correspond to the components of the Program's work hierarchy (effort, project, task and subtask). The relationships between these components are shown in Figure 3-3. The set of data elements is independent of implementation constraints imposed by a DBMS. Some DBMSs will require that additional data elements be defined for the data base so that the DBMS record structuring and security can be checked. Additional fields may be needed to provide unique identification to logical records in the data base. A security code field is needed to prevent unauthorized access to protected records.

3.4.1 Data Element Dictionary

The Data Element Dictionary contains an entry for each data element that may be used in the MTP data base. The entries consist of the following parts:

- Data Element Name: English name used to refer to a particular data element according to standard nomenclature established for the Program.

- Acronym/Abbreviation: shortened form of the data element name used when the data element is referenced by the DBMS and the application software.

- Definition: used to describe the data element's meaning, significance or purpose.

- Form Where Recorded/System Generated: used to indicate the source of the data element.

- Reports Where Appears: used to indicate in which of the standard output reports the data element appears.

3-15

FIGURE 3-3. MT PROGRAM WORK HIERARCHY
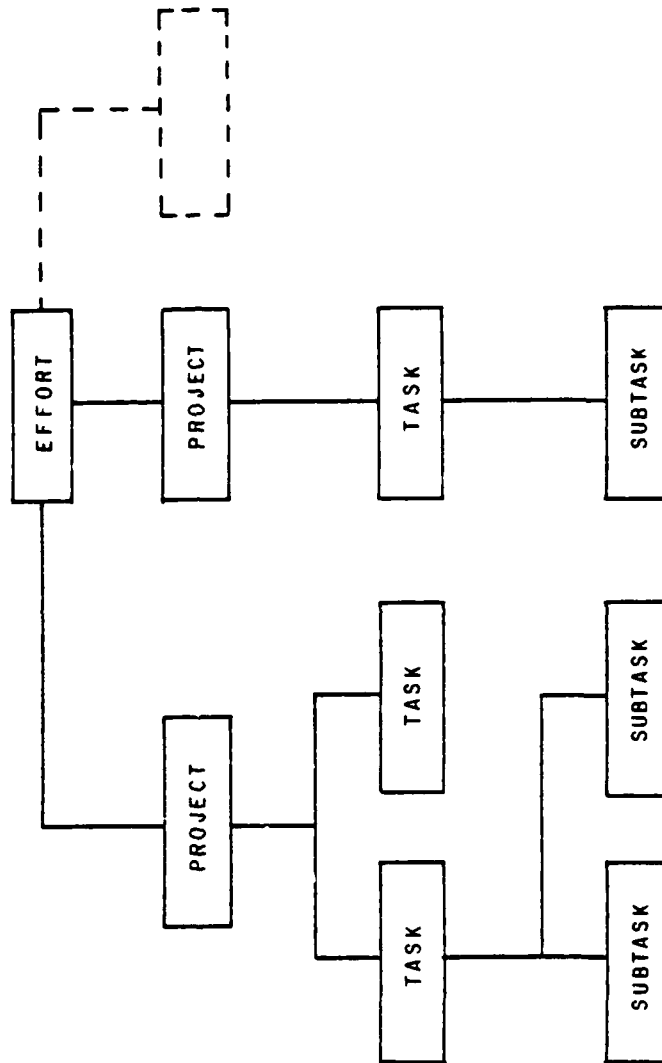
- Associated Level of Work Hierarchy: used to identify the level of the MTP work hierarchy (effort, project, task or subtask) with which the data element is associated.

- Investment Life Cycle Stage When Available: indicates at what stage of the investment life cycle the data are available.

- Physical Length: used to define the maximum length that the data element may be. The units (bytes, characters, words, etc.) will be determined by the computer system used.

- Format: used to describe the type of data (numeric, alphabetic, alphanumeric or coded) that the data element represents.

- Editing Criteria: used to define a set of rules that will be used to ensure that the contents of a data element are being entered correctly.

- Organization(s) Authorized to Read: used in defining the security access code that permits users to read the contents of a data element.

- Organization(s) Authorized to Modify: used in defining the access codes that permit users to update the contents of a particular data element.

3.4.2 Data Base Growth

Figure 3-4, MTP Data Base Growth Projections, depicts the expected growth of the data base over time. The initial data base is expected to contain approximately nine million characters of data and seven million characters of indices and ancillary files. This represents the 1375 projects now archival. Growth projections indicate that the MT data base will stabilize at approximately 65 million characters after the system has been in operation about five years. This will include five years of data on planned, active and historical projects.

3.5 FAILURE CONTINGENCIES

A critical area of concern in the development of the MTP data base is the ability of its resources (personnel, hardware and software) to respond to failures. The procedures for responding to failures or potential failures are described in the ensuing subsections.

FIGURE 3-4. MTP DATA BASE GROWTH PROJECTION
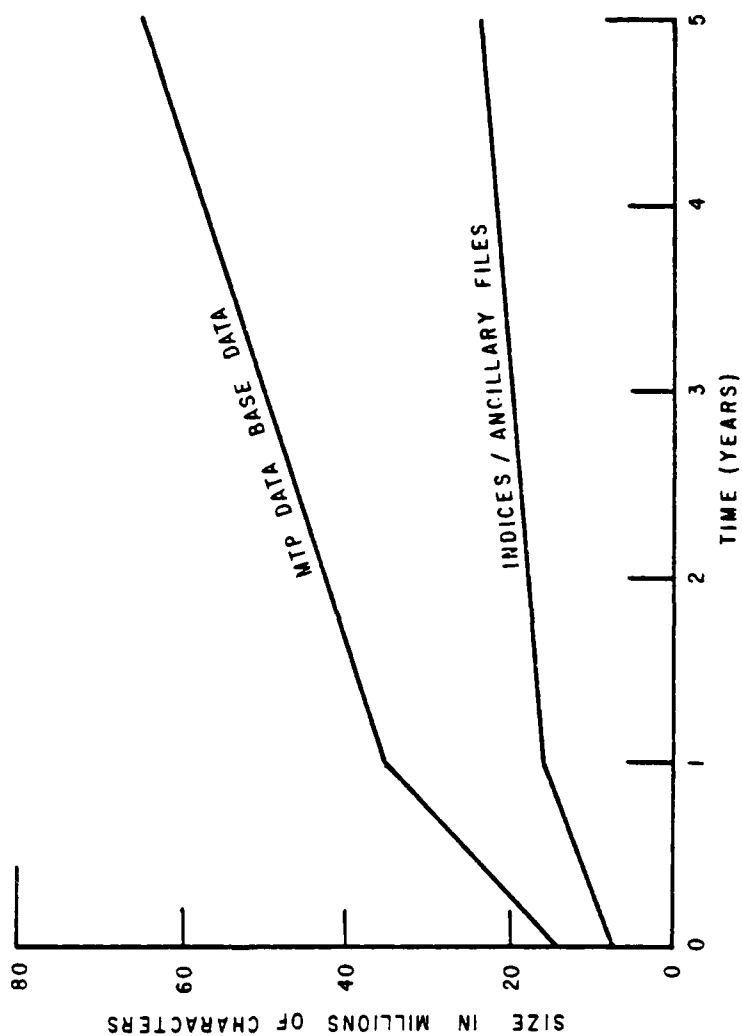
3.5.1 Backup

To minimize the amount of time lost due to damage of, or errors in, the data base and its associated software (e.g., program libraries, directories, tables), sets of back-up files will be created and maintained. These files will be created using installation standards.

3.5.1.1 Data Base Backup

An image of the data base will be produced at the time that the data base is declared operational; modifications are made on a periodic basis. This image will be duplicated on both disk and tape. To ensure the integrity of these backups, a version number will be assigned to each copy. The method used to number each version should differentiate a normal backup (i.e., original data base and the fifth periodic backup, Version 1.5) from a major revision (i.e., Version 2.0).

Procedures such as how often the data base will be backed up (copied), by whom, how many versions will be kept, where the back-up versions will be archived, purge dates, and documentation (audit trail) of the contents of each version will be decided by the System Manager or DBA. All backups (copies) of the data base will be created with password protection to ensure that the proper access with read-only permission is granted.

The back-up software and its job control language should be kept as a cataloged procedure to ensure data base integrity and security.

3.5.1.2 Data Base Management Software Backup

An image of the software (source statements, executable modules) and its associated job control language used to process data, produce standard reports, and assist the MTP users will be created when the software is declared operational, when software enhancements are made, and on a periodic basis. All failure contingencies discussed concerning data base backup apply to the DBMS software.

3.5.2 Fallback

The ease with which a data base management system (DBMS) can be installed
and maintained is one of the primary considerations in selecting a DBMS. The
hardware/software environment selected will be one in which compatible hard-
ware/software is available or obtainable for a time period required to meet
minimal MT Program requirements.

In a worst case situation, manual procedures may be employed to meet the
most critical reporting needs. In order to obtain the information needed to
fulfill reporting requirements, back-up tapes will be printed producing a
hardcopy print of the data base. This printed output may be used as a base-
line depicting the status of the data base as of that checkpoint.

However, the Tri-Services MTP data base is normally not highly time-
sensitive, and any problems that may occur should not affect the MT mission.

3.5.3 Restart

The DBMS selected to operate and maintain the Tri-Service MTP data will
possess the capability of restarting execution of a batch update at the latest
checkpoint, once the program terminates because of a program or system
failure. The frequency of checkpoints will depend upon the hardware/software
environment.

The data base restore capability will be executed when the data base
administrator's staff determines that a program or system failure can be
classified as an intermittent failure. In an intermittent failure, the data
base contents remain intact and the data base is readable. The data base
administrator's staff will use the version of the data base that was being
used at the time of the failure and reapply all transactions to the data base.
This action will be initiated as soon as possible after error detection in
order to restore the use of the system to all MTP users.

SECTION 4. ENVIRONMENT

4.1 EQUIPMENT ENVIRONMENT

The minimum equipment required for the successful MTPIS development and operation is identified in this section. Nearly all of the equipment described could be used for other ADP applications or shared with other systems when not in use for the MTPIS. The only requirement is that the equipment be available to the MTPIS users when necessary; the equipment need not be dedicated to the MTPIS application.

4.1.1 Requirements for Central Computer Site

The following, along with Figure 4-1, describes the central computer configuration.

- A central processor with a word size of at least 16 bits, no less than 512 Kbytes of real memory or one Mbytes of virtual memory, an operator console, an I/O control unit and I/O channels adequate to service the I/O devices described below, and a data communications processor able to support telecommunications access by ten simultaneous users.

- A disk controller with a disk drive. On-line disk storage capacity available for MTPIS files must total at least 80 Mbytes.

- A magnetic tape controller and a 9-track tape drive able to read and record at densities of at least 1600 bpi.

- A line printer and controller capable of producing 132-column output at a rate of at least 600 lines/minute.

- A graphic plotter and control unit. The minimum acceptable equipment will be a single-pen plotter capable of producing x-y plots on 8½ x 11 inch paper. For management's purposes, color graphics equipment would be desirable.

4.1.2 Requirements for Users

An MTPIS user will require one or more of the following hardware configurations (shown in Figure 4-2).

FIGURE 4-1. MTPIS HOST EQUIPMENT ENVIRONMENT
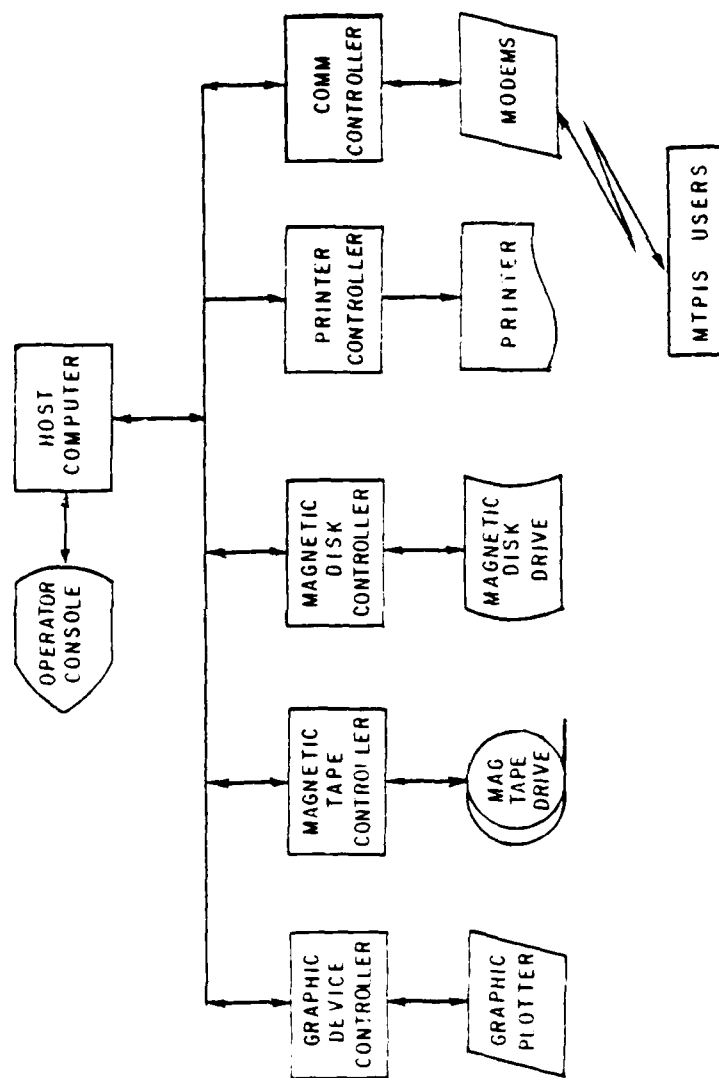
FIGURE 4-2. MTPIS USER HARDWARE ENVIRONMENT
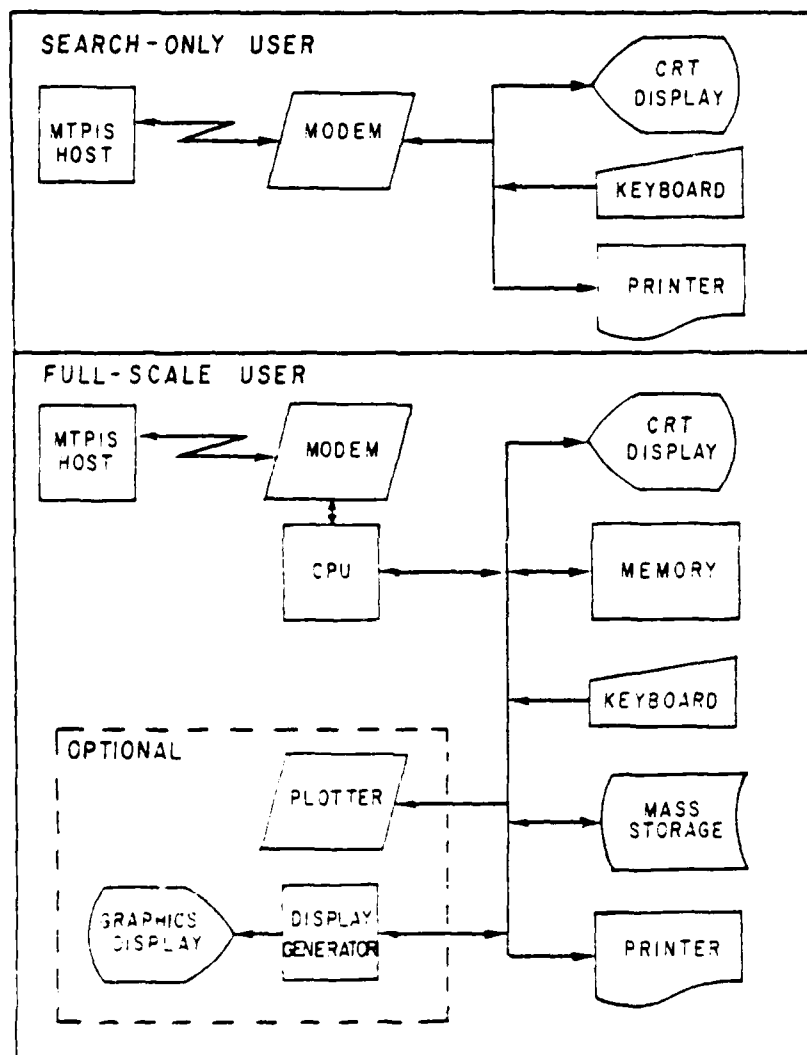
- For users who will only search the data base and not require the full reporting capabilities of the system, an ASCII display terminal or comparable teletype-compatible terminal will suffice. The components include a CRT display, keyboard, and modem or acoustic coupler. An optional printer may be required for hard-copy output.

- For users who provide batch input to the system via telecommunications, a remote batch terminal or an intelligent terminal will be required. The components include a CPU, keyboard, memory, alphanumeric display, mass storage (disk or tape) and modem. A line printer may be needed for the remote batch terminal (for file dumps), and a letter-quality printer may be required for the intelligent terminal or the remote batch terminal.

- Users who wish to take advantage of the graphics capabilities of the system will require an intelligent terminal (as described above) with an additional graphics display tube and display generator that can be interfaced with the central computer system. Some remote users may desire a local plotter (similar to that described for the central site) to produce hard-copy output.

4.2 SUPPORT SOFTWARE ENVIRONMENT

The development and operation of the MTPIS will require the support software described in this section. The application-specific software (such as report generator programs) is not described in this section, but the development of such software will require the use of this support software.

4.2.1 Operating System Requirements

The operating system must allow "simultaneous" access to the computer system by at least ten MTPIS users. This requirement will probably be met by an operating system that provides a timesharing mode. The system must have telecommunications software to support input and output operations performed by remote users. It must include disk file access methods and file maintenance procedures (such as file cataloging and backup). The system must provide utilities such as a sort/merge package, a procedural language compiler, a linkage editor and loader system for program development, and other utilities normally used in data processing.

4.2.2 DBMS Requirements

The DBMS must provide on-line access to the data base through a query language that allows searching of full text, keyed-field retrieval and the operation of simple descriptive statistics on the content of the data base. It must provide a report-writer package to accommodate the development and storage of report-generator software for the MTPIS standard and ad hoc output reports. The DBMS must provide facilities for the validation of input data and for batch updating of the data base. It must also support a central computer language interface so that procedural language programs can retrieve data from the MTP data base. The DBMS should either incorporate software with graphics, electronic mail and data dictionary capabilities, or allow data from the MTP data base to be passed to separate, compatible software packages. The user should be able to request that this be done without having to develop software to do it (that is, data extract on should be a built-in function of the DBMS).

4.2.3. Graphics Requirements

A graphics package capable of processing numeric input data to generate commands for an electrostatic or pen plotter to produce x-y plots. At a minimum, the package must provide routines to produce graphic formats for standard presentations such as histograms and pie charts.

4.2.4 Electronic Mail Requirements

An electronic mail package capable of storing and forwarding textual messages among user sites is required. The package must provide prompting for distribution lists and message composition, must stack messages for each user site, and must provide backup/recovery in case of system failure.

4.2.5 Data Dictionary Requirements

A data dictionary package must ensure the integrity of the data base documentation and data base contents and provide security for the data base and its contents.

4.3 INTERFACES

The principal users with which the MTPIS must interface are the Air Force, Army, and Navy MTP systems. This Tri-Service interface will be in the form of batch or on-line input to the MTP data base. All input to the MTPIS will adhere to the standards of the MTPIS hardware/software environment.

4.4 SECURITY AND PRIVACY

The MTP data that are contained in on-line and off-line storage devices are "UNCLASSIFIED." In addition, input to and outputs from the MTPIS, whether on-line or batched, are unclassified.

4.4.1 System Security

The specific computer system security requirements for the MTPIS are:

- Access--the system must limit access to authorized users by requiring user name and a password.

- Password--the system must restrict authority for the assignment of user passwords to the MTPIS System Manager.

- Software Protection--the system must protect system software from unauthorized alterations.

- Unauthorized Try--the system must allow "n" attempts of access to the system. After "n" attempts, the System Manager is notified and access is denied ("n" attempts will be dynamic and will be determined by the System Manager).

4.4.2 Program Security

The following security measures are applicable to the application programs of the MTPIS:

- Unauthorized Use--the system must contain a list of authorized users for each program and limit the use of specific programs to authorized users or categories of users.

- Program Modification--the system must provide users with a means of assigning passwords to their programs and must limit access to these programs to the Air Force, Army, Navy, and other designated MT users.

4.4.3 Data Security

Data in the MTPIS data base will be protected in the following manner:

- Unauthorized Access--the system must have the capacity to maintain a list of authorized users for each data element and limit the access to specific data elements to authorized users or categories of users.

- Access Type--the system must allow the DBA or a file creator to designate read only, write only, or modify (read/write) access to individual data elements.

- Unauthorized Try--the system must allow "n" attempts of access to the data base. After "n" attempts, the System Manager is notified and access is denied (the number of attempts shall be determined by the System Manager).

SECTION 5. COST FACTORS

5.1 SYSTEM COSTS

In order to carry out the development and implementation of a baseline MTPIS, the Director for Industrial Resources, OUSDR&E(AM) requires information concerning the cost associated with the various stages of system development. Apart from the performance requirements defined in earlier sections of this Functional Description, cost will be a major factor in the hardware/ software selection process.

The estimates provided in this Section are based upon current information available from commercial sources and do not depict any special discounts or package agreements. These estimates serve only as general guidelines so that implementation strategies can be evaluated.

Specific alternatives for hardware, software, site, etc., were not identified at the time this FD was written because the Tri-Service Advisory Group had not yet completed its implementation recommendations. However there are some assumptions and constraints, described below, that limit the alternatives and define cost ranges.

5.1.1 Configuration Constraints

The basic constraints affecting the MTPIS development, hardware, software and operational costs are:

- The MTPIS must be operational by the end of FY83.

- The MTPIS will not require a fully dedicated hardware/software environment. This indicates utilization of a system with excess capacity and time.

- The MTPIS must interface with and be compatible with a data communications to support the remote batch and interactive MTP user.

5-1

5.1.2 Configuration Assumptions

The following assumptions are made concerning cost factors for the development, hardware, software and operation of the MTPIS:

- Any leased hardware, software and communications facilities will be obtained on a time-used basis from a government facility or commercial vendor.

- All relevant documentation associated with the use of leased or purchased hardware, software and communications facilities will be made available to the users of the MTPIS.

- The MTP user community will provide the necessary hardware/software to be used at their site locations to fulfill their OSD reporting requirements.

- The principal methods of entering data into the MTP data base by the users will be machine-readable magnetic tape or disk delivered to the central computer site for input. This input may also be transmitted electronically in a batch mode using a communications network.

- Software, hardware or communications facilities acquired from a government facility will incur some usage fee, although it is anticipated that such charges will be less than from a commercial vendor.

- All training associated with the lease or purchase of hardware, software and communications facilities will be made available to the users, operators, DBA and systems programmer when needed.

- The central computer environment will be stable for at least one year, or modifications will not require any additional expenditures, degrade performance or render the MTPIS inoperable.

- Any software or hardware available at the selected central computer that meets a high percentage of MTPIS needs will be considered a candidate for the MTPIS. This reduces start-up and operational costs.

- In addition to purchase/lease cost, other factors, such as training, maintenance, vendor reputation, availability and compatibility, will be evaluated prior to purchasing/leasing decisions.

5.2 SOFTWARE COSTS

This section discusses cost estimates for each software package considered necessary to support the MTPIS. Table 5-1, MTPIS Software Costs, lists each package and its associated expected cost.

TABLE 5-1. MTPIS SOFTWARE COSTS

Item/Software	Purchase	Lease (monthly)
1. DBMS	$120,000	$4,500
2. Graphics Package	10,000	400
3. Electronic Mail	10,000	400

The key component of the MTPIS will be the DBMS. A DBMS package capable of supporting the MTP data base has not yet been selected. However, several packages meeting the system's general requirements have been identified. The DBMS packages that will be evaluated for selection vary in capability. For the purpose of estimating costs, the DBMS to be acquired was assumed to be capable of storing, retrieving and managing MTP data as defined in the Data Element Dictionary. In addition, the DBMS was assumed to contain software capable of maintaining data security protection, backup, recovery, a report writer, and a data dictionary. Purchase price, including installation, training and maintenance, would range from $90,000 to $140,000. An approximate average purchase price of packages that have been examined is $120,000. The monthly lease price for such a package would be approximately $4,500.

A graphics package that will be compatible with the hardware, software performance requirements of the MTPIS must be selected. Graphics packages meeting the general requirements of the MTPIS were examined. Purchase price ranges from $4,000 to $25,000; the expected price approximates $10,000. A monthly lease price is about $400.

The electronic mail software package meeting the requirements as stated in Section 3 of this document will probably be a package separate from the DBMS software. Purchase prices for electronic mail software range from $6,000 to $15,000. The monthly lease price for this software is about $400.

It is assumed that the MTPIS will be implemented at an existing computing facility that has the other support software required for system operation. Therefore, cost estimates have not been developed for items such as an operating system, telecommunications software, and system utilities. None of these packages should have to be leased or purchased specifically for the MTPIS.

5.3 EQUIPMENT COSTS

The equipment required for the central computer site will be used on a shared basis. It is expected that all such equipment described in Section 4 will not need to be purchased for the MTPIS but will be made available for this application by an existing government or commercial facility. Cost estimates are not provided for the central site mainframe and associated hardware.

Data communications terminals will be required for the MTPIS users. The desired equipment configurations meeting the requirement of types of site are shown in Figure 4-2. Table 5-2 summarizes the expected costs for these types of terminal configurations. ASCII display terminals can be purchased for $1,000 to $2,500 or leased for $80 to $200 per month. The purchase price for remote batch terminals ranges from $20,000 to $60,000 depending on features and expandability. The monthly rental price for such equipment ranges from $600 to $2000. An intelligent terminal and its associated equipment would be desirable for each major MTP user such as the MT offices in OUSDR&E and in each Military Department.

The purchase price for intelligent display terminals meeting the performance requirements of the MTPIS ranges from $10,000 to $25,000 with monthly lease prices of $300 to $1,200. The optional graphics terminal, controller and plotter cost between $7,000 and $20,000.

TABLE 5-2.   MTPIS MONTHLY EQUIPMENT COSTS

Item	Purchase	Lease
ASCII Terminal	$ 1,500	$ 100
Remote Batch Terminal	30,000	1,000
Intelligent Terminal	15,000	600
Optional Graphics Equipment	10,000	500

Remote communication with the MTPIS will be accomplished through a commercial or government data communications network, providing direct connections or dial-up access.   Commercially-owned networks charge customers based on the types of services and the amount of time each service is used.   MTPIS will not require the purchase of communications channels or any equipment apart from modems, the cost of which has been incorporated into the terminal costs quoted.

5.4   DEVELOPMENTAL COSTS

This section discusses the estimated costs for the major activities associated with developing the MTPIS.   Table 5-3, MTPIS Development Costs, lists each activity that has been defined to create an operational MTPIS.   The overall plan for developing the MTPIS is described in Section 6, System Development Plan.

The discussion in this section concerning the activities and their related cost follows the steps outlined in Table 5-3.   Figure 6-1 shows some overlap of activities, meaning that more than one activity may be in progress at one time.   In the following discussion, no attempt is made to show how staff members will be utilized.   The intent is to show the amount of time, the

TABLE 5-3. MTPIS DEVELOPMENT COSTS

	Activity	Labor Cost
1.	Evaluate DBMSs	$ 9,600
2.	Select Hardware/Software Environment	6,400
3.	Acquire Hardware/Software Environment	6,400
4.	Design Data Base	16,000
5.	Program Application-Specific Software	31,200
6.	Prepare Documentation	28,800
7.	Perform Initial Load of Data Base	20,800
8.	Conduct System Test	10,400
9.	Turn Over System	25,600
	Total	$155,200

TABLE 5-4. MTPIS DEVELOPMENT LABOR RATES

Job Classification	Equivalent GS	Commercial $/Hour	Commercial $/Month
System Manager/Team Leader (S/M)	GS-13	40	6,400
Senior Systems Analyst (SSA)	GS-13	40	6,400
Senior Programmer (SP)	GS-11	30	4,800
Data Base Administrator (DBA)	GS-11	35	5,600
Programmer (P)	GS- 9	25	4,000
Technical Writer (TW)	GS- 9	25	4,000
		Total	31,200

NOTE: $/h reflects fully-loaded rates.

labor classification, and rates (see Table 5-4, MTPIS Development Labor Rates) that are needed to successfully complete the activity (task) being discussed.

The following activities have been determined to be necessary to create a baseline MTPIS:

- Evaluate DBMSs. Requires a team leader one-half time (two man-weeks) and a senior systems analyst full time for one man-month. The total cost anticipated is $9,600.

- Select Hardware and Software Environment. Using the data obtained in defining the hardware/software constraints, the team leader and the senior systems analyst will present their recommendation to OSD. It is anticipated that two man-weeks for each staff member is required at a cost of $6,400.

- Acquire Hardware and Software Environment. Based on the cumulative findings and analysis in the preceding activities, a final decision will be made on the purchasing/leasing of hardware and software. This activity involves contacting sources and acquiring the desired products or services. This should require the team leader and senior systems analyst two man-weeks each at a cost of $6,400.

- Design Data Base. Involves developing a structure that will be compatible with the MTP work hierarchy of effort, project, task and subtask. This activity should require two senior analysts with data base design experience, especially with the DBMS purchased, for a total of 2.5 man-months. A total cost of $16,000 is anticipated.

- Program Application-Specific Software. Requires the interaction between the users, data base administrator, senior systems analyst (software designer), and a senior programmer. The data base administrator should require one man-month, the systems designer two man-months, and the programmer time (including testing and installation) should require three man-months. The anticipated labor cost is $31,200.

- Prepare Documentation. Requires the preparation of program maintenance manuals, test plans, test analysis reports and users' manuals. These manuals must provide adequate instruction for maintenance personnel to understand the program mechanics. The users' manual must provide detailed instructions for the users to access the MTPIS. Documents meeting these needs require the participation of: software designer, two man-months; programmers, three man-months; and a technical writer, one man-month. The anticipated cost is $28,800.

- Perform Initial Load of Data Base. A one-time start-up cost will be incurred to create the initial MTP data base. These data will be collected for each Service. At present there are approximately 600 active projects for the Army, 175 active projects for the Navy and 350 active projects for the Air Force. The total number is 1025 (approximately) active projects. Proposed MT projects should number

approximately 350 for all Services. Each active/proposed project requires a maximum of 6,500 characters and if there are approximately 1375 projects, then 9.1 million keystrokes will be required to convert data for the baseline. The cost of converting (keystroking) these data is approximately $15,000, which will be incurred by the Services. The effort of the DBA and programming personnel to ensure data base integrity is approximately two man-months per category, yielding a total cost of $20,800.

- Conduct System Test. Involves the responsible programmer(s), test coordinator (project leader), systems analyst(s) and the user(s). A Test Analysis Report will be prepared and delivered to the sponsor for approval. The total effort (apart from the user's time) will be two man-months at a cost of $10,400.

- Turn Over System. The following areas of performance will be required: training (in the form of on-the-job training and formal/informal classes), delivery of documentation/manuals, and start-up support. This assistance should cover a period of several months. This activity will require about four man-months of labor (two each for the System Manager and team leader) at a total cost of $25,000.

The total cost (labor costs) to develop an operational MTPIS is anticipated to be $155,200, as shown in Table 5-3.

5.5 OPERATIONAL COSTS

Operation of the MTPIS will generate costs in the areas of hardware, software, communications services, and personnel. The one-time start-up cost to OSD for the data base load will be minimal. The data that are needed will be obtained from the Services, which will incur most of the initial costs. Any changes to the data base based on experience gained from working with the existing prototype data base will be made at that time. The MTPIS hardware, software, personnel and communications costs are listed in Table 5-5, MTPIS monthly Operational Costs.

The personnel required to maintain the MTPIS consist of a System Manager who will serve the dual role of data base administrator (DBA), systems programmer/analyst and data entry support. The MTPIS personnel will be assigned on a part-time, as-needed basis. Anticipated personnel costs are approximately $5,000 per month.

TABLE 5-5. MTPIS MONTHLY OPERATIONAL COSTS

Item	Lease ($)	Labor ($)
1. Hardware		
- CPU	500	
- ASCII Terminal	100	
- Remote Batch Terminal	1,000	
- Intelligent Terminal	600	
- Mass Storage (80 MBytes)	100	
- Optional Graphics Equipment	500	
- Off-line Printer	275	
2. Software		
- DBMS	4,500	
- Electronic Mail	400	
- Graphics	400	
3. Personnel		
- DBA/System Manager		2,000
- System Software Programmer/Analyst		2,000
- Data Entry Support		1,000

Equipment requirements of the MTPIS are stable. A small incremental growth in mass storage requirements is expected. Assuming a five-year life span for the MTP data base, the maximum expected size of the MTP data base is 65 million characters, including index and ancillary files. High density disk packs are available and, if acquired, would not have to be replaced. The purchase price of this equipment ranges from $800 to $1,200; the lease cost ranges from $80 to $120 per month.

Periodic backups of the MTP data base will be created. These backups or versions may be stored on magnetic tape, at a rental cost of about $7 per reel of tape per month. Eight reels (for three versions of the data base) are recommended at a monthly rental charge of $56.00.

The central processing unit (CPU) needed to support the desired software packages will require 512 Kbytes of internal core storage or 1 MByte of virtual storage. A usage cost of a CPU of this size at an estimated usage of one hour per day at $25 per hour will be approximately $500 per month. The monthly lease payments for an intelligent terminal and the communications associated with this terminal are discussed in a previous section.

The OSD personnel and the DBA and staff will require the use of a graphics plotter. The use of this piece of equipment will not be extensive. For this reason, the service can best be acquired; this cost will be minimal. It is anticipated that plotters can be provided by the central computer facility.

The software cost associated with the daily operations of the MTPIS may be in the form of lease payments. The monthly operating cost for software includes the DBMS (that consists of a data dictionary, report writer and a query language), electronic mail, and a graphic package. The monthly lease payment on this software is $5,300. The total monthly operating cost for the MTPIS is estimated at $13,375.

SECTION 6. SYSTEM DEVELOPMENT PLAN

The steps remaining in the development of the MTPIS are shown in Figure 6-1 and are described below.

A. Evaluate DBMSs. The proper data base management system is the key design element for the MTPIS. The performance and capability requirements specified in this FD will be used to evaluate commercial and government-proprietary DBMS packages that are currently available.

B. Select Hardware and Software Environment. The choice of DBMS will constrain the choice of hardware for implementation. If the choice of hardware is limited by policy factors, there may be an effect on the choice of software. These constraints, along with the performance and capability requirements stated in this FD, will be used to make a choice of the hardware/software environment in which the MTPIS will be developed.

C. Acquire Hardware and Software Environment. OSD will obtain access to the selected hardware/software environment. Depending upon the nature of the provider of the selected services and products (commercial or DoD organization), the appropriate procedures will be followed to establish usage rights (e.g., procurement, inter-agency support agreement, memorandum of understanding, etc.).

D. Design Data Base. The MTP data base schema will be developed using the data definition language of the selected DBMS. Data element definitions will be entered into the DBMS data dictionary. Data input and validation procedures will be specified. Procedures for

FIGURE 6-1. MTPIS DEVELOPMENT PLAN

Activity	Months (1–11 Gantt schedule)	Effort (Man-Months)
A. Evaluate DBMSs		1.5
B. Select Hardware and Software Environment		1.0
C. Acquire Hardware and Software Environment		1.0
D. Design Data Base		2.5
E. Program Application-Specific Software		6.0
F. Prepare Documentation		6.0
G. Perform Initial Load of Data Base		4.0
H. Conduct System Test		2.0
I. Turn Over System		4.0
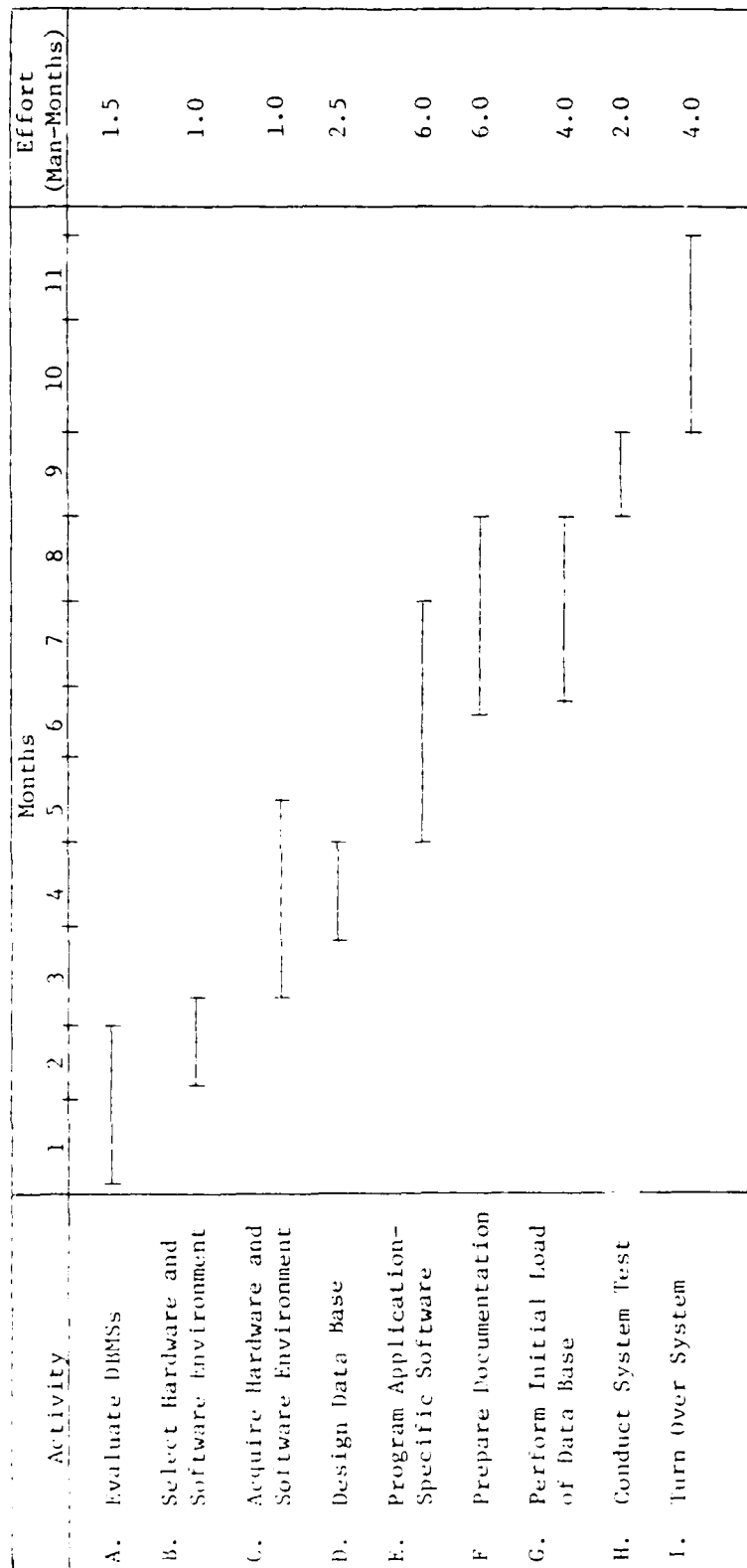
data base update, backup and restoration will be prepared using the DBMS maintenance utilities.

E. Program Application-Specific Software. Software will be developed to perform functions that are unique to the MT application. Among the programs to be written are report generators for the standard MT reports, input screen generators for inteiligent terminals to be used, special data editing programs for data editing not performed by the DBMS, and any other data maintenance routines not provided by the DBMS.

F. Prepare Documentation. Documentation will be developed for the MTPIS in accordance with the DoD Automated Data Systems Documentation Standards. The MTPIS will require a program maintenance manual, a system test plan and a user manual.

G. Perform Initial Load of Data Base. The System Manager will load the MTP data base with data provided by the Services on all planned and active MT investments.

H. Conduct System Test. The System Manager will direct the system test according to the MTPIS test plan. The test wil. rcise all required capabilities of the system and will involve the participation of users in OSD, the Services and industry.

I. Turn Over System. The syst.. developers will turn the MTPIS over to the System Manager for production operation. The users will be trained and documentation will be distributed.

The execution of the development plan is dependent upon the timely completion by the Tri-Service Advisory Group of its tasks. Recommendations concerning the scope and methodology of Service cooperation in providing data to the MTPIS are critical to the detailed system design decisions that must be

made. The performance schedule shown in Figure 6-1 is based on the completion of the Advisory Group's tasks by the end of the first month.

The next critical activity is the acquisition of the MTPIS hardware/ software environment. If a competitive procurement for either hardware or software is necessary, a six- to twelve-month gap will be imposed on the schedule. During that time, none of the detail design or programming work can proceed.

APPENDIX A

MANUFACTURING TECHNOLOGY
PROGRAM INFORMATION SYSTEM
PROPOSED REPORT FORMATS

This appendix contains the proposed MTP report formats and the data
fields in each report. These report formats are preliminary in nature.
Additional report formats can be generated as needs are determined. Although
a considerable amount of analysis has been conducted to support these report
formats, they will be finalized in the development of system/subsystem
specifications.

The categories of report types are as follows:

- General Reviews of MTP Activities

- Funding Reviews

- Summaries of Investment Activities

- Effectiveness Reports

- Recommendation Reports

- Budget, Apportionment, Effectiveness Graphics.

Table A-1 gives the report title and a description of reports in each of
these areas. Each of the report formats are shown in more detail in
Sections 1 through 6 of this appendix.

TABLE A-1. MTP REPORTS

Report Title	Specific Use
	General Reviews of MTP Activities
Effort Review	Overview of fund requests and major subordinate command responsible for managing the effort. This multiple page report provides control information such as effort number, title, Service, command, point of contact, OSD appropriation, subcode, and program element. Also presented are costs for past, present and future years, related efforts, implementation plans, recommendations, projects contained in the effort, and other data.
Project Review	Provides OSD and the Services with the capability to make fund request decisions, provides performance indicators, and identifies major subordinate command responsible for managing the project. Provides information such as project number, title, Service, command, point of contact, OSD appropriation, effort number and subcode. Project life cycle data are contained within this report.
Task Review	Provides OSD and the Services the capability to make fund request decisions, and identify the command responsible for managing the task. Provides information; such as, task number, title, Service, point of contact and effort number. Additional data to evaluate task performance are contained within this report.
Subtask Review	Provides OSD and the Services the capability to monitor technology transfer and associate subtasks with the work hierarchy (i.e., Effort, Project and Task). Provides information such as subtask number, project number, effort number, point of contact. Additional data are contained to evaluate subtask performance.

MTP REPORTS (Cont.)

Funding Reviews

Report Title	Specific Use
Effort Funding Review	Provides OSD, the Services and major action commands a funding overview, aids in making investment decisions, and provides performance indicators on dollars spent. This report provides the following information: Military Department, effort number, title, command, program element and subcode. Additional data depict the status of funds for past, present and future years.
Project Funding Review	Provides OSD, the Services and major action commands funding overview that aids in making fund request decisions and provides performance indicators on dollars spent. This report provides the following information: Military Department, project number, title, command, program element, and subcode. Additional data depict the status of funds for past, present and future years, final cost, and organization approval.

Summaries of Investment Activities

Program Summary	Provides planning/execution indicators on program effectiveness by technical category. This report provides the following information: appropriation, program element, subcode, line number, effort number and effort title. Additional budgetary data display fund amounts and variances.
Reprogram Summary	Provides investment awareness and program direction information. This report provides the Military Department, appropriation and program elements, budgetary data and comments.

Summaries of Investment Activities (Cont.)

Report Title	Specific Use
MT Service Summary	Provides OSD and the Services with statistical indicators depicting the status of effort, and projects for prior and current reporting periods. This report provides information such as Military Department, period covered, and command. Additional numerical and budgetary data are provided for each action command.
Thrust Area Summary	Provides OSD and the Services with long- and short-range planning effectiveness data. This report depicts planning effectiveness data by line number, project number, task number, task title, work state, and shows total investments by Military Department and command.
Implementation Benefit Summary	Provides program marketing and investment verification data. This report presents Military Department, command, line number, effort number project, and additional fiscal and savings data.
Accomplishment Summary	Provides program marketing and investment verification data that describe equipment, reporting information, distribution/ restrictions and technical transfer. This report is presented by effort, Service, command, project, task and subtask.

Effectiveness Reports

Execution Effectiveness	Provides OSD and the Services with a technical performance indicator depicting task(s) slippage, if any. This report provides the following information: Military Department, command, line number, effort number, project number, task number and title.

MTP REPORTS (Cont.)

Summaries of Investment Activities (Cont.)

Report Title   Specific Use

Technical Effectiveness
  Review   Provides an indicator depicting the return on
                                  investment and results. This report provides
                                  the   following   control   information,   effort
                                  number, project number, project title, Service
                                  and Command. Additional data are provided to
                                  describe project deliverables and due dates.

Recommendation Reports

Investment Recommendations   Provides OSD and the Services a tool that aids
                                  in Program planning. This report is organized
                                  by fiscal year, Military Department and fiscal
                                  categories.   This   report   also   contains   OSD
                                  recommendations and notes.

Budget, Apportionment, Effectiveness Graphics

MT Program Summary   These histograms provide OSD and the Services
  Histogram   graphic representations of data that are also
                                  presented in MTP Reports. They present
Implementation Benefits   statistical data on slippage, completion of
  Histogram   projects and expenditure of funds.

OUSDR&E Coordination
  Histogram

Execution Effectiveness
  Histogram

SECTION 1. GENERAL REVIEWS OF MTP ACTIVITIES

The report types in this category display data for individual elements of the Program hierarchy: efforts, projects, tasks or subtasks. The reports are to be used in the Program planning and execution monitoring functions.

To produce the reports, individual records of the appropriate type (effort, project, task or subtask) will be retrieved from the data base according to user-specified criteria, such as Military Department, appropriation category, action command, technical area, etc.

EFFORT REVIEW

NAME:
DATE: xx/xx/xx

EFFORT NO. xxxx
TITLE: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
SERVICE: xxxxxxxxxx
COMMAND: xxxxxxxxxxxxxxxx

OSD APPROPRIATION: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
SUBCODE: xxxx
PROGRAM ELEMENT: xxxxxx

POINT OF CONTACT
NAME: xxxxxxxxxxxxxxxxxxxx
PHONE: xxx-xxx-xxxx
LOCATION: xxxxxxxxxxxxxxxxxx
          xxxxxxxxxxxxxxxxxxx
          xxxxxxxxxxxxxxxxxx

PROBLEM: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SOLUTION: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

FIELD ITEMS SUPPORTED: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

BENEFITS: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

QUALITATIVE BENEFITS: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

A-7

EQUIPMENT COST 999999.9

TOTAL COST 999999.9

REVISION DATE: XX/XX/XX

FISCAL PLAN

FISCAL YEARS

TYPE OF FUNDS	PRIOR	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99
XXXXX										
PLANNED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
AUTHORIZED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
OBLIGATED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EXPENDED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

TECHNICAL PLAN: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

RELATED EFFORTS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

APPLICATION AREA: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

PLANNED COMPLETION: XX/XX/XX   ACTUAL COMPLETION: XX/XX/XX   WORK LIFE CYCLE STATE: XX/XX/XX, XXXXXXXXXXXXX

IMPLEMENTATION PLAN: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MANAGEMENT COORDINATION
MANAGEMENT GROUP: XXXXXXXXXXXXXXXXX
TECHNICAL AREA: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
REVIEW DATE: XX/XX/XX
COMMENTS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

EFFORT REVIEW (cont.)

EFFORT NO.: xxxx

OSD REVIEW

REVIEW DATE: xx/xx/xx

RECOMMENDATION: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

NOTES: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

ACTION: xxxxx

HIGHEST APPROVAL: xxxxxxxxxxxxxxxxxxxxxxx

FUNDING APPROVAL HISTORY

	PRIOR	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99
BUDGET	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
APPORTIONMENT	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

EFFORT FINAL COST: 999999.9

PROJECT LIST

PROJECT NO.	TITLE
XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

A-9

PROJECT REVIEW

PROJECT NO.: XXXX   TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SERVICE: XXXXXXXXX   (REVMP) XXXXXXXXXXXXXXXXX

POINT OF CONTACT:
    TYPE: XXXXXXXXXXXXXXXXXX
    LOCATION: XXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXXXXXXXXXXXX
    PHONE NBR: XXX XXX XXXX , XXX XXX XXXX

GOAL/AOP ASSOCIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXX   SUBGOAL: XXXX

EFFORT APPLICATION: XXXX

PROBLEM:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SOLUTION:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TECHNICAL AREA:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

BENEFITS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    INVESTMENT TOTAL: 999999.9
    SAVINGS CATEGORY: XXXXXXXXXXXX
    SAVINGS TYPE: XXXXXXXXXX
    PLANNED SAVINGS: 999999.9
    ACTUAL SAVINGS: 999999.9
    PLANNED DATE OF
    EST SAVINGS: XX/XX/XX

QUALITATIVE BENEFITS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    EQUIPMENT COST: 999999.9
    TOTAL COST: 999999.9
    REVISION DATE: XX/XX/XX
    PRO TYPE SUBMITTED: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

RELATED EFFORTS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

A-10

PROJECT TITLE: XXXX   TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SERVICE: XXXXXXXXX   COMMAND: XXXXXXXXXXXXXXX

FISCAL PLAN:

TYPE OF FUNDS	PRIOR	FY92	FY93	FISCAL YEAR FY94	FY95	FY96	FY97	FY98	FY99
PLANNED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
AUTHORIZED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
OBLIGATED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EXPENDED	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

TECHNICAL PLAN:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

APPLICATION AREA:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

LIFE CYCLE COMPLETION: STATE: XX/XX/XX,XXXXXXXXXXXXXXXXX
PLANNED: XX/XX/XX   ACTUAL: XX/XX/XX

SIGNIFICANT ACTIVITY:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

IMPLEMENTATION PLAN:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

END OF CONTRACT:
BRIEFING DATE: XX/XX/XX
BRIEFING LOCATION:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

END PRODUCT UTILIZATION:
USER: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
USER LOCATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

PROJECT REVIEW (cont.)

PROJECT NO.: XXXX
SERVICE: XXXXXXXX

TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
COMMAND: XXXXXXXXXXXXXXX

MTAC COORDINATION:

MFAC: XXXXXXXXXXXXXX

TECHNICAL AREA: XXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXX

REVIEW DATE: XX/XX/XX

COMMENTS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CSD REVIEW

REVIEW DATE: XX/XX/XX

RECOMMENDATIONS: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

NOTES: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ACTION: xxxx

HIGHEST APPROVAL: xxxxxxxxxxxxxxxxxxx

FUNDING APPROVAL HISTORY:

FISCAL YEARS

TYPE OF FUNDS	PRIOR	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99
BUDGET	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
APPORTMENT	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

PROJECT FINAL COST: 999999.9

DATE OF LAST UPDATE: xx/xx/xx

TASK LIST:

TASK NO.	TASK TITLE
xx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xx	xx..xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

A-13

TASK REVIEW

TASK #: xxxx   TITLE: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
SERVICE: xxxxxxxxx   COMMAND: xxxxxxxxxxxxxxxxxxxx

POINT OF CONTACT:
  NAME: xxxxxxxxxxxxxxxxxx
  LOCATION: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
            xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
  PHONE: 999-999-9999 OR 999-999-9999

PROBLEM:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SOLUTION:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

EFFORT ASSOCIATION: xxxx
END ITEM SUPPORTED: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

BENEFITS:
  INVESTMENT TOTAL: 999999.9
  INVESTMENT SOURCE:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

SAVINGS CATEGORY: xxxxxxxxxxxx
SAVINGS TYPE: xxxxxxx
PLANNED SAVINGS: 999999.9
ACTUAL SAVINGS: 999999.9
PLANNED DATE OR
1ST SAVINGS: xx/xx/xx

QUALITATIVE BENEFITS:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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TASK REVIEW (cont.)

EQUIPMENT COSTS: 999999.9

TOTAL COSTS: 999999.9

REVISION DATE: xx/xx/xx

FISCAL PLAN

TYPE OF FUNDS:
FISCAL YEAR: 19XX
AMOUNT PLANNED: 999999.9
AMOUNT AUTHORIZED: 999999.9
AMOUNT EXPENDED: 999999.9

TECHNICAL PLAN:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

RELATED EFFORTS:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

APPLICATION AREA:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TECHNICAL AREA:
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

END PRODUCTS:
DELIVERABLES/DELIVERABLE REVISION
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

A-15

DELIVERABLE REVISION NUMBER: XX

COMPLETION DATE:
   ORIGINAL: xx/xx/xx
   CURRENT: xx/xx/xx
   ACTUAL: xx/xx/xx

DATE OF COMPLETION ESTIMATE: xx/xx/xx

WORK STATE: xx/xx/xx   XXXXXXXXXXXXX

SIGNIFICANT ACTIVITY:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

FUNDING STATUS:
   CONTRACTED AMOUNT: OBLIGATED 999999.9   EXPENDED 999999.9
   IN-HOUSE AMOUNT: OBLIGATED 999999.9   EXPENDED 999999.9

IMPLEMENTATION PLAN:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

END OF CONTRACT:
   BRIEFING DATE: xx/xx/xx
   BRIEFING LOCATION:
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

END PRODUCT UTILIZATION:
   USER: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   USER LOCATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

A-16

TASK REVIEW (cont.)

MTAG COORDINATION:

MTAG GROUP: XXXXXXXXXXXXXXXX
TECHNICAL AREA:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
REVIEW DATE: XX/XX/XX
COMMENTS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

OSD REVIEW:
REVIEW DATE: XX/XX/XX
RECOMMENDATION:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

NOTES:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
ACTION: XXXX
HIGHEST APPROVAL: XXXXXXXXXXXXXXXXXXXXX
FUNDING:
FY: XX
BUDGET: 999999.9
APPORTIONMENT: 999999.9
DATE OF LAST UPDATE: XX/XX/XX
SUBTASK LIST:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

A-17

SUBTASK REVIEW

PROJECT NO. XXXX   EFFORT NO. XXXX

SUBTASK NO. XXXX

SERVICE: XXXXXXXXX

POINT OF CONTACT:
    NAME: XXXXXXXXXXXXXXXXXX
    TELEPHONE: XXX-XXX XXXX OR XXX-XXX XXXX
    LOCATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

START DATE:
    PLANNED: XX/XX/XX   ACTUAL: XX/XX/XX

TECHNICAL AREA:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

APPLICATION AREA:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

WORK PLAN:
    ORGANIZATION NAME: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    AGREEMENT TYPE: XXXX   DATE: XX/XX/XX
        IDENTIFICATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
        TOTAL COST: 999999.9

SCOPE:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DELIVERABLES (ORIGINAL):
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DATE (ORIGINAL): XX/XX/XX

WORK RESULTS:
    DELIVERABLES REVISED:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
        REVISION NO. XX   REVISION DATE: XX/XX/XX
    CURRENT COMPLETION DATE: XX/XX/XX
    ESTIMATED DATE OF COMPLETION: XX/XX/XX
    DELIVERABLES RECEIVED:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SUBTASK NO. XXXX

PROJECT NO. XXXX   REPORT NO. XXXX

SERVICE: XXXXXXXXX   COMMAND: XXXXXXXXXXXXXXXXX

ITEM OF CONTRACT:
    BRIEFING DATE: XX/XX/XX
    BRIEFING LOCATION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ACTUAL COMPLETION DATE: XX/XX/XX

PROGRESS:
    EQUIPMENT:
    POINT OF CONTACT NAME: XXXXXXXXXXXXXXXXXXXX
    HARDWARE LOCATION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

OPERATIONAL STATUS:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

PLANNED UTILIZATION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DESCRIPTION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
NOMENCLATURE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
IDENTIFICATION NO.:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DATE DELIVERED: XX/XX/XX

INFORMATION:
    REPORT NO.: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    REPORT TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    ABSTRACT:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SUBTASK REVIEW   (cont.)

SUBTASK NO. XXXX

PROJECT NO. XXXX   EFFORT NO. XXXX

SERVICE: XXXXXXXXX   COMMAND: XXXXXXXXXXXXXXXX

REPORT TYPE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PERIOD COVERED: FROM XX/XX/XX TO XX/XX/XX
AUTHOR: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXY
GOVERNMENT ACCESSION NO.: XXXXXXXXXXXXXXXXXXXXX
DOCUMENT RETRIEVAL: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DISTRIBUTION/RESTRICTIONS:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
SECURITY CLASSIFICATION: XX
DOCUMENT POINT OF CONTACT: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

WORK MANAGEMENT:
PERFORMING ORGANIZATION:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

CONTROLLING OFFICE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MONITORING AGENCY: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DATE OF LAST UPDATE: XX/XX/XX

A-20

SECTION 2. FUNDING REVIEWS

The two report types in this category show the status of funds for efforts or projects. The reports are to be used in the program planning and execution monitoring functions.

The reports will be produced by retrieving individual records from the data base according to user-specified search criteria such as Military Department, fiscal funding code, technical area, application area, action command, etc.

DATE OF DATA: XX/XX/XX

MILITARY DEPARTMENT: XXXXXXXXX

EFFORT NUMBER: XXXX

TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ACTION COMMAND: XXXXXXXXXXXXXXXX

PROGRAM ELEMENT: XXXXXXX

SUBCODE: XXXX

FISCAL YEAR

	PRIOR	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99
EFFORT PLANNED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EFFORT OSD BUDGET	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EFFORT OSD APPORTIONMENT	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EFFORT OBLIGATED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
EFFORT EXPENDED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

EFFORT FINAL COST: 999999.9

NUMBER OF PROJECTS: 999

A-2

MILITARY DEPARTMENT: XXXXXXXXX
PROJECT NUMBER: XXXX
TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
ACTION COMMAND: XXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXXX
SUBCODE: XXXX

FISCAL YEAR

	PRIOR	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY99	FY92
PROJECT PLANNED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
PROJECT OSD BUDGET	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
PROJECT OSD APPORTIONMENT	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
PROJECT OBLIGATED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
PROJECT EXPENDED COST	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

PROJECT FINAL COST: 999999.9

PROJECT HIGHEST APPROVAL: XXXXXXXXXXXXXXXXXXXXXXX

PROJECT ACTION CODE: XXXXX

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SECTION 3. SUMMARIES OF INVESTMENT ACTIVITIES

The reports in this category are summary reports that will show the distribution of program emphasis by fiscal and technical categories. The reports will be used in the planning, monitoring, and implementation follow-up functions of Program management.

The reports will be generated by retrieving data by user-specified search criteria such as appropriation category, Military Department, technical area, application area, variance from planned funding levels, etc.

PROGRAM SUMMARY

FY99

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXX
SUBCODE: XXXX

EFFORTS TABLE: GROUP 9

LINE NO.	EFFORT NUMBER	EFFORT TITLE	BUDGETED	APPORTIONED	OBLIGATED	BUDGETED -APPORT.	APPORT.- OBLIGATED	BUDGET -OBLIG
999	XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9
999	XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

EFFORTS TABLE: GROUP 9

LINE NO.	EFFORT NUMBER	EFFORT TITLE	BUDGETED	APPORTIONED	OBLIGATED	BUDGETED -APPORT.	APPORT.- OBLIGATED	BUDGET -OBLIG
999	XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9

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END
DATE
FILMED
5 83
DTIC

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

REPROGRAM SUMMARY

FY99

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXXX
SUBCODE: XXXX

LINE NO.	EFFORT NUMBER	EFFORT TITLE	AMOUNT OBLIGATED	NOTES
999	XXXX	XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999	XXXX	XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999	XXXX	XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

MT SERVICE SUMMARY

XXXXXXXX

PERIOD COVERED: XX/XX/XX - XX/XX/XX

ACTION COMMAND	NO. OF EFFORTS PREV. PERIOD	THIS PERIOD	NO. OF PROJECTS PREV. PERIOD	THIS PERIOD	NO. OF SIGNIFICANT ACTIVITY RPTS PREV. PERIOD	THIS PERIOD	PERCENT REPORTED	ACTIVE FUNDING PREV. PERIOD	THIS PERIOD	COMPLETED PROJ. THIS PERIOD
XXXXXXXXXXXXXXXX	999	999	999	999	999	999	999	999999.9	999999.9	999999.9
XXXXXXXXXXXXXXXX	999	999	999	999	999	999	999	999999.9	999999.9	999999.9
TOTAL	999	999	999	999	999	999	999	999999.9	999999.9	999999.9

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THRUST AREA SUMMARY

LINE NO.	PROJECT NO.	TASK NO.	TASK TITLE	WORK STATE	TOTAL INVESTMENT	MILITARY DEPARTMENT	ACTION COMMAND
XXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX, XXXXXXXXXXX	999999.9	999999.9	XXXXXXXXXXXXXXXXX
XXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX, XXXXXXXXXXX	999999.9	XXXXXXXXXX	XXXXXXXXXXXXXXXXX
XXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX, XXXXXXXXXXX	999999.9	XXXXXXXXXX	XXXXXXXXXXXXXXXXX

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IMPLEMENTATION BENEFIT SUMMARY

MILITARY DEPARTMENT: XXXXXXXXX

ACTION COMMAND: XXXXXXXXXXXXXXX

LINE NO.	EFFORT NO.	PROJECT NO.	PROJECT TITLE	TOTAL INVESTMENT	SAVING CATEGORY	SAVING TYPE	PLANNED SAVING	ACTUAL SAVING	PLAN DATE 1ST SAVING
XXX	XXXX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXX	XXXXXXX	999999.9	999999.9	XX/XX/XX
XXX	XXXX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXX	XXXXXXX	999999.9	999999.9	XX/XX/XX
XXX	XXXX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXX	XXXXXXX	999999.9	999999.9	XX/XX/XX

ACCOMPLISHMENT SUMMARY

EFFORT NO: XXXX
SERVICE: XXXXXXXXX   COMMAND: XXXXXXXXXXXXXXX
PROJECT: XXXX   TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TASK: XX

SUBTASK: XXXX
EQUIPMENT:
    NOMENCLATURE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    DESCRIPTION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    MODEL: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    OPERATIONAL STATUS:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    PLANNED UTILIZATION:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

    LOCATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
              XXXXXXXXXXXXXXXXXXX

    POINT OF CONTACT: XXXXXXXXXXXXXXXXXXXXXXX

INFORMATION:
    REPORT TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    REPORT NUMBER: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    REPORT TYPE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    PERIOD COVERED: FROM XX/XX/XX TO XX/XX/XX

    ABSTRACT:
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ACCOMPLISHMENT SUMMARY (cont.)

AUTHOR: XXXXXXXXXXXXXXXXXX
SECURITY CLASSIFICATION: XX
POINT OF CONTACT: XXXXXXXXXXXXXXXXXXXX
DOCUMENT RETRIEVAL: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DISTRIBUTION/RESTRICTIONS:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TECHNICAL TRANSFER:

END OF CONTRACT BRIEFING DATE: xx/xx/xx

END OF CONTRACT BRIEFING LOCATION:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

RESPONSIBLE ORGANIZATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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SECTION 4. EFFECTIVENESS REPORTS

The reports in this category will assist management in reviewing Program performance by highlighting problems in the execution phase of projects. These summary reports will be used in the Program monitoring function.

The reports will be generated by retrieving data by user-selected categories such as application area, fiscal category, responsible organization, etc. The reports will show slippage in performance, delivery of products or expenditure of funds.

MILITARY DEPARTMENT: XXXXXXXXX

COMMAND: XXXXXXXXXXXXXXXX

LINE NO.	EFFORT NUMBER	PROJECT NUMBER	TASK NO.	TASK TITLE	START DATE	PLANNED ORIGINAL	COMPLETION CURRENT	TECHNICAL COMPLETION	FISCAL CLOSEOUT	TASK SLIPPAGE
XXX	XXXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XXX
XXX	XXXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XXX
XXX	XXXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XX/XX/XX	XXX

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EXPENDITURE EFFECTIVENESS SUMMARY

LINE NO.	ACTION COMMAND	PROJECT NO.	TASK NO.	TASK TITLE	AUTHORIZED FUNDING	CONTRACT OBLIGATED	EXPENDED	IN-HOUSE OBLIGATED	EXPENDED	NOT OBLIGATED	SCHEDULED COMPLETION
XXX	XXXXXXXXXXXXXXX	XXXX	XX	XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	XX/XX/XX
XXX	XXXXXXXXXXXXXXX	XXXX	XX	XXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXX	999999.9	999999.9	999999.9	999999.9	999999.9	999999.9	XX/XX/XX

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TECHNICAL EFFECTIVENESS REVIEW

EFFORT NO.: XXXX   PROJECT NO.: XXXX   TITLE: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

SERVICE: XXXXXXXXX   COMMAND: XXXXXXXXXXXXXXX

REVISION:

  NUMBER: XX   DATE: XX/XX/XX

DELIVERABLE:

  NAME (ORIGINAL):

          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DATE DUE (ORIGINAL): XX/XX/XX

  NAME (REVISED):

          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

DATE DUE (REVISED): XX/XX/XX

DATE RECEIVED: XX/XX/XX

SECTION 5. RECOMMENDATION REPORTS

The Investment Recommendation report is a summary of fund requests organized by fiscal year, Military Department and fiscal categories. The report will be used in the Program planning function.

INVESTMENT RECOMMENDATIONS

FYXX

MILITARY DEPARTMENT: XXXXXXXXX
PROGRAM ELEMENT: XXXXXX
SUBCODE: XYXX

LINE NO.	COMMAND	FUND REQ. NO.	FUND REQUEST TITLE	BUDGET YR. COST	OSD RECOMMENDATION	OSD NOTES
999	XXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
999	XXXXXXXXXXXXXXX	XXXX	XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	999999.9	XXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

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SECTION 6. BUDGET, APPORTIONMENT, EFFECTIVENESS GRAPHICS

The report types in this category show the planning programming, benefits, effectiveness and coordination of OSD appropriation categories by Military Department. These outputs will be used in the monitoring and follow-up functions of MTP management.

The outputs will be produced by retrieving data by user-selected categories such as Military Department, appropriation, program element and subcode. The reports will show statistical data on slippage, completion of projects and expenditure of funds.

MT PROGRAMMING SUMMARY HISTOGRAM
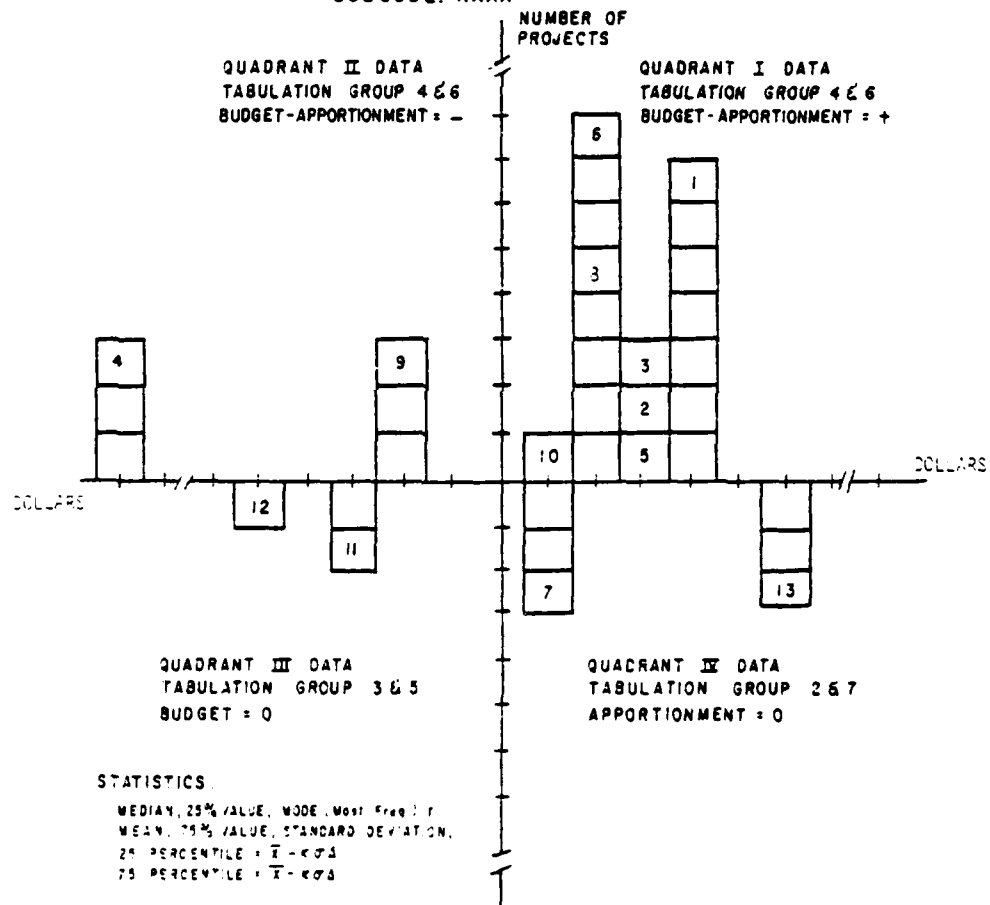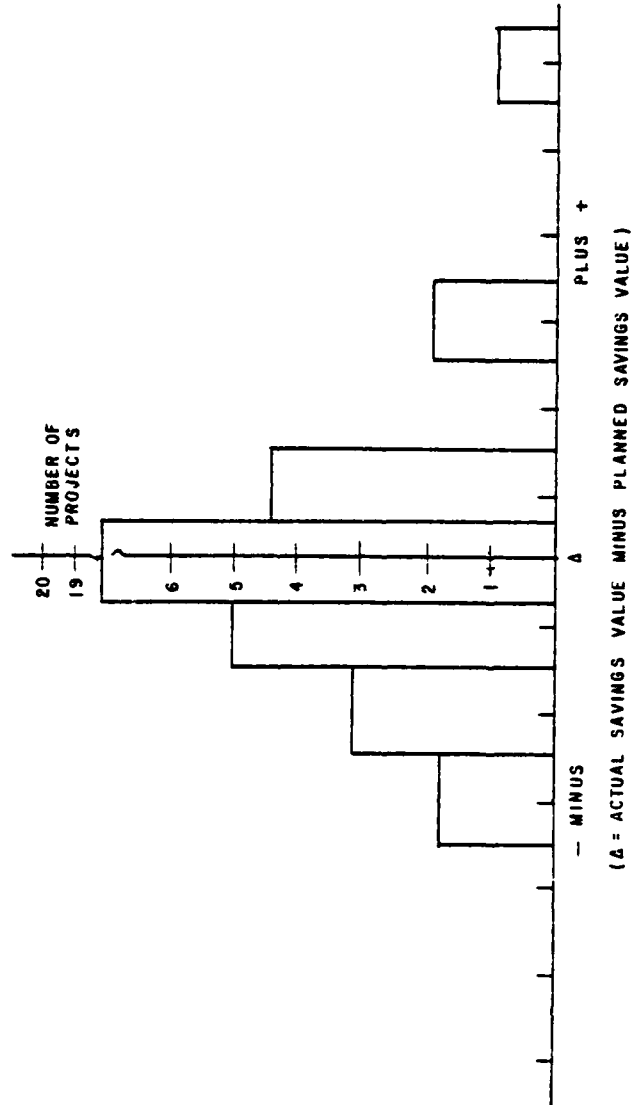## BUDGET - APPORTIONMENT
FY 99

PAGE: XX
DATE: XX/XX/XX

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXX
SUBCODE: XXXX

NUMBER OF PROJECTS

QUADRANT II DATA
TABULATION GROUP 4 & 6
BUDGET-APPORTIONMENT = −

QUADRANT I DATA
TABULATION GROUP 4 & 6
BUDGET-APPORTIONMENT = +

DOLLARS

DOLLARS

QUADRANT III DATA
TABULATION GROUP 3 & 5
BUDGET = 0

QUADRANT IV DATA
TABULATION GROUP 2 & 7
APPORTIONMENT = 0

STATISTICS:

MEDIAN, 25% VALUE, MODE (Most Freq.) r
MEAN, 75% VALUE, STANDARD DEVIATION,
25 PERCENTILE = $\bar{x} - \kappa \sigma \Delta$
75 PERCENTILE = $\bar{x} - \kappa \sigma \Delta$

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IMPLEMENTATION BENEFITS HISTOGRAM

FY 99

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXX

SUBCODE: XYXX

NUMBER OF PROJECTS

20
19
6
5
4
3
2
1

Δ

— MINUS

PLUS +

(Δ = ACTUAL SAVINGS VALUE MINUS PLANNED SAVINGS VALUE)

OUSD R and E COORDINATION
HISTOGRAM
FY 99

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PROGRAM ELEMENT: XXXXXX
SUBCODE: XXXX

NUMBER OF PROJECTS

21 20 19 10 9 8 7 6 5 4 3 2 1 0

DOLLARS (100K)

0 100 200 300 400 500 600 700 800 900 1000 1100 1500

EXECUTION EFFECTIVENESS HISTOGRAM

FY 99

MILITARY DEPARTMENT: XXXXXXXXX
APPROPRIATION: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
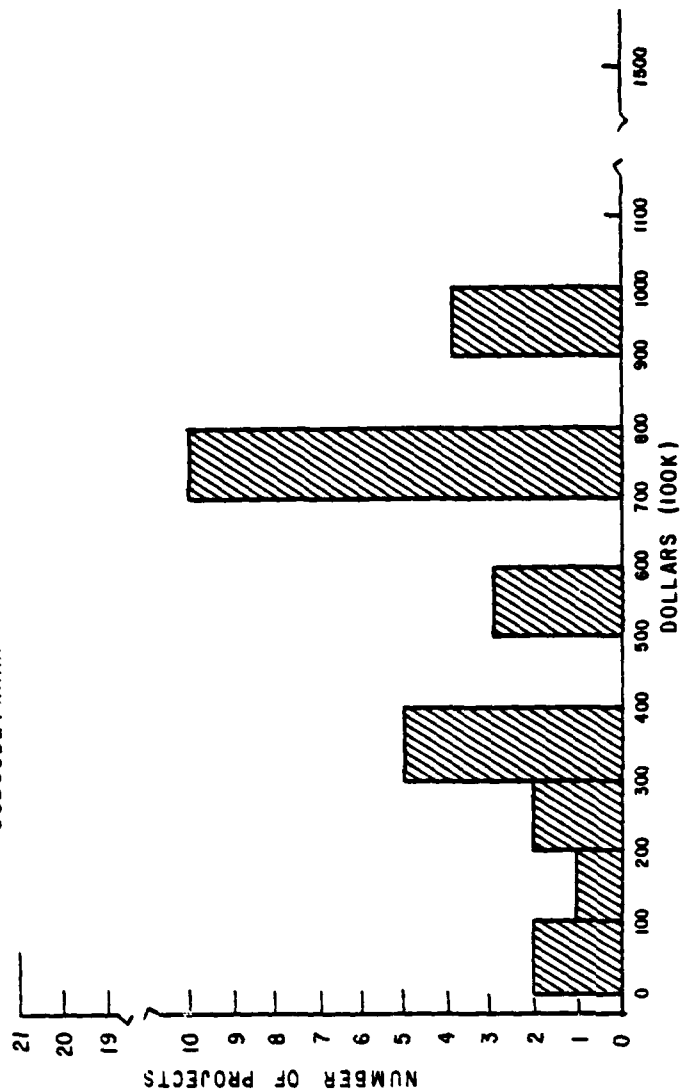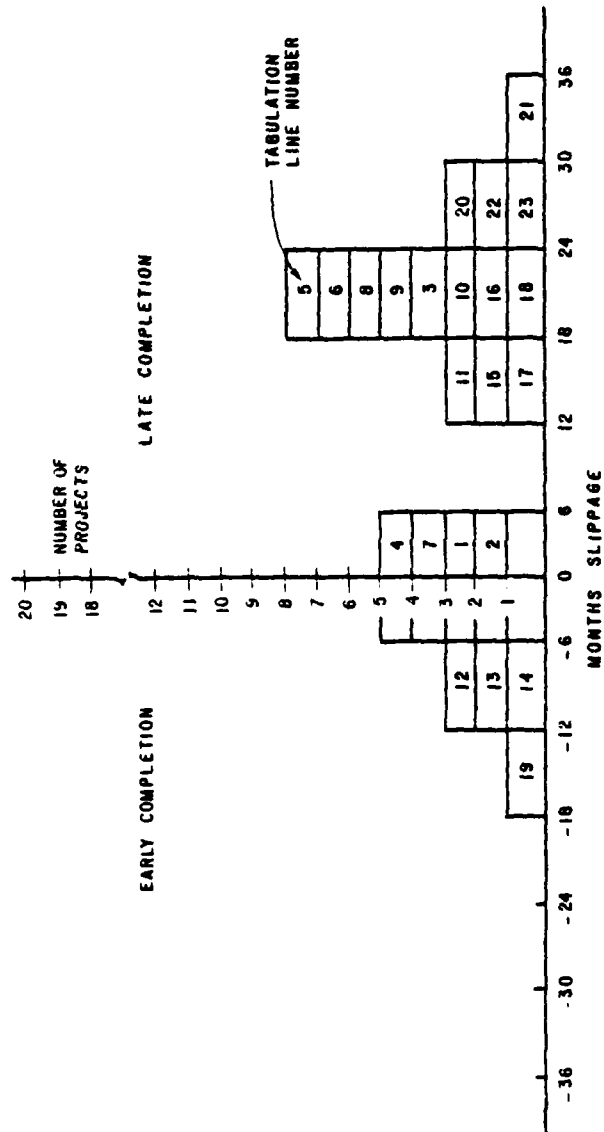PROGRAM ELEMENT: XXXXXX
SUBCODE: XXXX

PAGE: XX
DATE: XX/XX/XX

EARLY COMPLETION

LATE COMPLETION

NUMBER OF PROJECTS

TABULATION LINE NUMBER

MONTHS SLIPPAGE

-36 -30 -24 -18 -12 -6 0 6 12 18 24 30 36

FILMED

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